University of Brighton

Proceedings of the
European Conference on Social Media
University of Brighton
UK
10-11 July 2014

Edited by

Asher Rospigliosi and Sue Greener

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The Proceedings of the European Conference on Social Media

ECSM 2014

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Papers have been double-blind peer reviewed before final submission to the conference. Initially, paper abstracts were read and selected by the conference panel for submission as possible papers for the conference.

Many thanks to the reviewers who helped ensure the quality of the full papers.

These Conference Proceedings have been submitted to Thomson ISI for indexing.

Further copies of this book and previous year's proceedings can be purchased from http://academic-bookshop.com

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Preface

These Proceedings represent the work of contributors to the inaugural European Conference on Social Media, ECSM 2014, hosted in its first year by the University of Brighton, UK. The Conference Chair is Asher Rospigliosi and the Programme Chair is Dr Sue Greener, both from Brighton Business School, at the University of Brighton.

The conference will be opened with a keynote address by Dr Farida Vis from the University of Sheffield in the UK who will be talking about the evolution of research on social media. David Gurteen, well known for the Gurteen Knowledge Community, will give a presentation on Towards Smarter Socially Mediated Conversations and John Traxler, Professor of Mobile Learning from Wolverhampton University in the UK will present Taking Education into Cyberspace – Chaos, Crisis and Community.

The scope of this inaugural conference was deliberately intended to be broad as we were keen to see the range of disciplines undertaking social media research. We have certainly not been disappointed – with mini tracks on e-Participation and Democracy, Social Network Analysis, Social Media Innovation and Social Informatics. In addition tracks have evolved showing the current trend in social media research and areas include social media and marketing, the use of Facebook and social media in business – to name just a few.

With almost 200 people joining this first annual event, we look forward to ECSM becoming a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual advances in many different branches of social media. At the same time, it provides an important opportunity for members of the social media research community to come together with peers, share knowledge and exchange ideas.

With an initial submission of 266 abstracts, after the double blind, peer review process there are 76 academic papers, 14 PhD Papers and 16 Work in Progress papers in these Conference Proceedings. These papers reflect the truly global nature of research in the area with contributions from some 35 countries including Australia, Bahrain, Belgium, Canada, Czech Republic, Estonia, Finland, France, Germany, Greece, Hong Kong, India, Ireland, Israel, Italy, Japan, Kazakhstan, Lithuania, Macau, Malaysia, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Turkey, UK and the USA.

Papers published in the conference proceedings will be considered for further development and publication by a number of journals, including the Electronic Journal of Knowledge Management, The Journal of Information, Communication and Ethics in Society (JICES), The International Journal of Social Media and Interactive Learning Environments and The International Journal of Web Based Communities. Additionally extended/advanced versions of papers presented in the mini track on e-Participation and Democracy will be considered for publication in The International Journal of Electronic Governance.

We wish you a thought-provoking and lively conference.

Dr Sue Greener Programme Chair

and

Asher Rospigliosi, Conference Chair

July 2014

Conference Committee

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Asher Rospigliosi, Conference Chair, University of Brighton
Sue Greener, Programme Chair, University of Brighton
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Sandra Huskinson, ECSM 2014 Social Media Manager
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Dr Blooma John, RMIT University, Vietnam
Dr Sandra Moffett, University of Ulster's School of Computing and Intelligent Systems, Magee Campus, UK

Committee members

The conference programme committee consists of key individuals from countries around the world working and researching in the Social Media community. The following have confirmed their participation:

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Biographies

Asher Rospigliosi lecturers on digital marketing, e-commerce, management information systems and IS strategy University of Brighton Business School. His research interests range from Graduate Employability to e-learning and innovation in SMEs. Asher is a co-founder of the Business e-Learning Research Group and a member of the CIMER research group.

Programme Chair

Dr Sue Greener is a University teacher: HRM, Business Context, Research Methods and Learning & Development and has received a Teaching Excellence award from the University of Brighton and is Programme Leader for the Foundation Degree in Business. Sue is also the Course Director: online final year undergraduate course with students in diverse world regions, her researcher interests are focused on e-learning strategy, teacher development and reflective learning. Sue is the co-founder of the Business e-Learning Research Group and a member of the CROME research group on employment issues at Brighton Business School. Her Doctoral research focused on exploring students' readiness for online learning. Sue holds a BA, MBA, EdD, FHEA and is a Chartered Fellow of CIPD.

Keynote Speakers
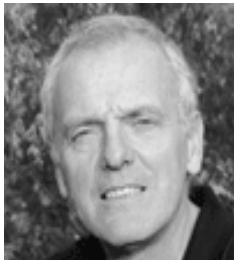
John Traxler is Professor of Mobile Learning, the world's first and a full UK professor since September 2009, and Director of the Learning Lab at the University of Wolverhampton. He is an honorary member of the Interdisciplinary Science, Education, Technologies and Learning group at the University of Glasgow and a Research Fellow at Mobile Studies in the University of Nottingham Ningbo. He is a Founding Director and current Vice-President of the International Association for Mobile Learning, Executive Committee Member of the USAID mEducation Alliance, Associate Editor of the International Journal of Mobile and Blended Learning and of Interactive Learning Environments. He is on the Research Board of the Association of Learning Technology, the Editorial Board of Research in Learning Technology and IT in International Development. He was Conference Chair of mLearn2008, the world's biggest and oldest mobile learning research conference. He has guest edited six special editions of peer-reviewed journals devoted to mobile learning including Digital Culture and Education, Distance Education, UNESCO Prospects and an African edition of the International Journal of Mobile and Blended Learning.

John has co-written a guide to mobile learning in developing countries for the Commonwealth of Learning and is co-editor of the definitive book, Mobile Learning: A Handbook for Educators and Trainers, with Professor Agnes Kukulska-Hulme. They are now working a second book, Mobile Learning: the Next Generation, due to be published in 2014. He is co-authoring a book, Key Issues in Mobile Learning: Research and Practice, with Professors Norbert Pachler and John Cook, and Mobilizing Mathematics: Case Studies of Mobile Learning being used in Mathematics Education with Dr Helen Crompton, and has written more than 30 book chapters on mobile learning. He is currently developing the world's first online masters course in mobile learning, building a network of African universities interested in innovative teacher development and teacher development and working on the UNRWA ICT for Education Strategy.

David Gurteen is well known internationally for his passion for transformative conversation and as the creator of the Gurteen Knowledge Cafe. David is an international speaker and facilitator in the fields of Knowledge Management, Organisational Learning and Organisational Conversation. He regularly runs his Gurteen Knowledge Cafes around the world. He is the founder of the Gurteen Knowledge Community - a global network of 21,000 people in over 160 countries and his monthly Knowledge Letter is now in its 13th year. In June 2010, David won the Ark Group's lifetime achievement award for services to Knowledge Management.
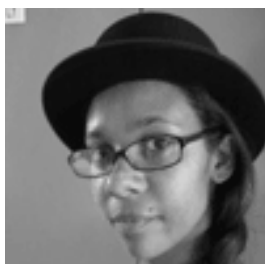
Dr Farida Vis is a Research Fellow based in the Information School at the University of Sheffield. Her Fellowship is on the theme of 'Big Data and Social Change', focusing on social media, data journalism and citizen engagement. As part of her social media work, she is interested in critical methods for better understanding social media, Big Data and algorithms. She has published widely in this area, most recently as part of a special issue on 'making data – Big Data and beyond' in First Monday (October 2013). She recently presented work on algorithmic cultures at ideas festival Future Everything (talk here) and a follow up to this at Improving Reality, part of the Brighton Digital Festival (talk here). She was recently appointed to the World Economic Forum's Global Agenda

Council on Social Media. She is a founding member of Open Data Manchester and currently leads two funded projects (EPSRC and AHRC) on the politics and possible future(s) of urban agriculture in the UK. As part of the 2013 ESRC Festival of Social Science she organized the very popular Researching Social Media conference, bringing together a wide range of researchers from academia, government, industry and the cultural sector. She coordinates the Researching Social Media MA module and her methods textbook, which in part arose from this teaching, co-authored with Information Scientist Mike Thelwall is forthcoming with Sage.

Mini Track Chairs

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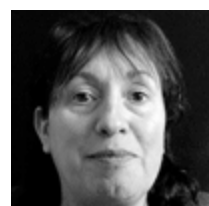
Dr Sandra Moffett is a Senior Lecturer of Computer Science with the University of Ulster's School of Computing and Intelligent Systems, Magee Campus. She is a core member of the Ulster Business School Research Institute. Her expertise on Knowledge Management contributes to her being one of the UK leading authors in this field. She has received a number of research awards and citations for her work. External funding has enabled Dr Moffett to undertake extensive quantitative/qualitative research to benchmark KM implementation within UK companies.

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Dr. Bob Barrett is a full professor for the School of Business at the American Public University in Charles Town, West Virginia, USA. He lectures both nationally and internationally on the topics of Intellectual Capital, Human Capital, Knowledge Management, HRD Forensics, Human Resource Management, Disability in the Workplace, e-Portfolios, and e-Learning.

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Andrei Kojukhov has MSc degree in Computer Science. He works as System Architect in leading telecom companies contributing to standardization in the domain of 4G technologies. In 2010 A. Kojukhov started his Ph.D. in the School of Education in Tel-Aviv University. His research interests are focused on the newest educational trends in postindustrial society.

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Knowledge Sharing Through Social Media in Higher Educational Institutions of Saudi Arabia

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Abstract: The academic sector today, especially in higher education institutions, realizes the necessity to apply a knowledge management system (KMS) to improve academic services, such as teaching instruction and learning processes. KMS can be a response to the competitive and productivity challenges seen primarily in the business world and, to some extent, in education. In order to capitalize on the knowledge in any organization, it is essential to consider the social aspect of knowledge management while using or reusing it or while sharing knowledge. However, it's a real challenge to get people to share all kinds of knowledge with a wide circle, especially via social media tools, as well as to be able to find useful knowledge from the right resources at the right time and with the right people. One major challenge for the development of KMS is to flawlessly incorporate the tools of social media into the working environment and the user's daily learning to enable the easy sharing of knowledge, enhance its exchange among the contributors to and seekers of information, and successfully manage that knowledge. This study explores the key role that social media play in knowledge sharing in the Saudi Arabian educational sector, specifically in the College of Computer and Information Sciences (CCIS) at King Saud University. For that, an online survey was conducted to study how knowledge exchange through social media takes place in CCIS. A detailed study has been done to examine the possibilities of having a knowledge sharing culture inside CCIS by examining the five dimensions of knowledge sharing. These five dimensions of people, content, willingness and awareness, motivations, and barriers to knowledge sharing are discussed and analyzed.

Keywords: Social media tools, Higher education institution, Knowledge management, Knowledge sharing

1. Introduction

Scope, size, and priorities are three factors that uniquely identify any higher education institution (HEI). Each HEI tries to balance among providing outstanding education, offering good opportunities for research, and operating as an active and functional institution in a competitive business market. Therefore, effective and successful knowledge management systems (KMS) are needed to enhance the performance of HEIs and to fill the gap between current and former contexts of knowledge creation, using, sharing, and application. KMS activities and processes must be in accord with the higher educational organization's goals, social processes, behaviors, and strategies (Ramakrishnan & Yasin 2012). Even though knowledge could be critical and crucial to other teachers and to the whole college as an educational organization, teachers usually keep this knowledge to themselves. This sort of knowledge has to be gathered, preserved, shared, and made available to everybody in the educational institution (Madhar 2010).

Knowledge is the most important resource in any given organization or institution. For knowledge to be more effective, it is essential to consider the social aspect of knowledge management (KM) while using, reusing, or sharing it (Zheng et al. 2010). A particular type of KMS depends on the social media that facilitate it to exchange and share knowledge worldwide among huge numbers of people in a speedy manner. Discussion forums, wikis, platforms for micro blogging, and tagging sites change the manner in which the users collaborate, communicate, and exchange knowledge (Seebach 2012).

The goal of this study is to build a better understanding of how social media might be used to assist the administration and staff in the College of Computer and Information Sciences (CCIS) at King Saud University (KSU) in creating a better knowledge-sharing culture. This research aims to analyze the motivations and challenges that drive the use of social media in knowledge sharing in an Arabic educational institution such as CCIS. For that, we investigate knowledge-sharing principles by dividing our study into five dimensions: people, content, willingness, awareness, and motivation to share knowledge items.

To accomplish this task, after the related work presented in section 2, the remainder of this paper entails describing our research questions in detail in section 3, considering the research methodology in section 4,

presenting the results of the statistical analysis in section 5, and offering a conclusion and further works in section 6.

2. Related Work

When people need knowledge to take an action, they turn to KMS. The management of knowledge can occur on several levels, including on organizational and personal levels. The organizational aspect of the management of knowledge primarily means that every type of information will be brought together to sort; categorize; store; make use of; and, finally, share to promote and facilitate communication among individuals. This aggregating of information will help employees improve the quality of products and advance the core competence of the organization. Personal management of knowledge usually aims at creating, retrieving, evaluating, using/reusing, and sharing knowledge. The management of knowledge deals with the evolution of knowledge sharing, use, or reuse (Zheng et al. 2010; Zheng 2004).

The rising success of KM does not spare any domain. Recently, there has been a huge demand to apply KM techniques in higher education. Kidwell et al. (2000) emphasized that HEIs are appropriate places to apply KM practices and systems. More specific to this study, the sharing of knowledge involves individuals' willingness to share with others the knowledge that they have created or acquired (Sun, Hong-ping; Liu 2006).To everyone, sharing is a natural thing, but sharing of knowledge within an organization is not a simple issue. To advance an organization's goals, individuals should offer their knowledge at an organization or group level (Ipe 2003).

Zheng et al. (2010) spot three merits of social media that support the sharing of knowledge. Primarily, the contents conveyed through social media contain social cues to offer people extra opportunities in sharing knowledge. More information will be appended to the information that is published in the social media, such as who has made a contribution to the content, introduction of the content's source, and who is concerned with the content. These social cues might update those using the platforms on how to easily locate an expert or a collaborator to support further knowledge sharing through social interaction. Second, the social media is expected to increase people's level of motivation in sharing knowledge. If there is a trust between the two parties of communication, the sharing of information will be more efficient. Social media might influence the removal of barriers to the information provision and channels of knowledge acquisition. They also might enhance processes, knowledge, and storage. Third, social relations are essential for the efficient sharing of knowledge. Through the timeliness of social media and the attributes of presence, these media can most likely promise efficient social interaction. Social media are the most important networking sites because of their subscribing feature, which allows people to follow each other; and can also be followed by others. The social media have a social presence that allows the exchange of knowledge from both sides; knowledge seeker and knowledge owner. This feature enables the establishment of a trust relationship by both sides, which enhances the effective sharing of knowledge.

The main aspects of knowledge sharing depend on the people involved in such activity through the use of social media tools. It is on these platforms that professionals get to name their direct peers as the best group with which to share knowledge and exchange information. Statistics show that 52% of people share their knowledge and information to help one another learn and recover from failure, while 86% only share their knowledge with their associates and their close circle (Krauthammer 2012). Based on the scientific research performed, it is clear that people tend to overvalue the members of their group and tend to disregard those outside of the group. In addition, only those who are close get to interact strongly with members of the group. This factor later leads to a focus on the members of a team since only those who are close have a greater awareness of each other's knowledge (Hansen, Mors & Lovas 2005).

Another dimension of knowledge sharing concerns the kind of knowledge that is supposed to be shared through the social media tools in any organization. Two types of knowledge exist in any organization: tacit and explicit knowledge. Knowledge that is transmittable through formal, systematic language is referred to as explicit and is usually stored and kept in one location and also transfers to individuals independently (Ipe 2003). On the other hand, tacit knowledge is only local and cannot be found in files, databases, or even books. It is cognitive and usually includes values, insights, assumptions, and experience (Anand & Singh 2011). In most cases, tacit knowledge is difficult to formalize and communicate since it is specific and personal to a certain context (Smith 2001).This means that the transfer of tacit knowledge is much more complex than that of explicit knowledge since it takes longer to send, meaning that the receiver can make sense of some parts of the knowledge only with a lot of insight (Anand & Singh 2011).

An individual must be aware to know that preferred social media tools do exist within the organization and that professional individuals are willing to share their knowledge with others who are using those particular tools. However, the transformation of knowledge from individual knowledge to organizational knowledge is not easy since people tend to store their knowledge, and the organizations involved cannot force their employees to share. All an organization can do is encourage and facilitate the sharing of knowledge. For this sharing to succeed, much knowledge and wisdom is needed to look into what motivates professionals, as well as to identify the barriers that prevent an individual from sharing knowledge (Bock et al. 2005).

According to the findings of Ipe et al. (2003), internal factors—knowledge as reciprocity and power—and external factors—including rewards and relationships with the recipient—are the main reasons why people share knowledge and are motivated to continue to do so. Prusak and Fahey (1998) also demonstrated some of the inhibiting factors that apply to knowledge sharing among individuals. Such factors include one paradigm that says that knowledge is power; and, if spread, it will surely make a person lose his/her own personal guarantee. Low appreciation of those contributing to knowledge is among the other factors that inhibit knowledge sharing.

3. Research Questions

The aim of this research is to investigate the knowledge-sharing culture via social media tools in CCIS. We will seek to answer some of the following questions:

- Which social media tools are used most in CCIS to share knowledge?
- Who is involved in knowledge sharing in CCIS?
- What type of knowledge are people sharing in CCIS?
- Are people in CCIS willing to share their knowledge via social media tools?
- Are people in CCIS aware of the existence of social media tools so they can use them in knowledge sharing?
- What would motivate people in CCIS to share knowledge through social media tools?
- What would prevent people in CCIS from sharing knowledge via social media tools?

4. Methodology

For this research, an online survey was conducted to study how knowledge exchange through social media takes place in CCIS. Data were gathered through inviting different researchers, faculty, and staff members of CCIS to answer an online survey. Invitees included all the people in the four CCIS departments. The data-gathering process was completed from November 7–21, 2013. We were able to collect 55 valid responses to the online survey.

The questionnaire used is adopted from those developed by past researchers (Bakhuisen 2012). Some modifications were made to the questionnaire to fit our research aims. The research technique applied in this study is a questionnaire using a 5-point Likert scale, from 1 (indicating fully disagree) to 5 (indicating fully agree). The survey contained 33 questions, including demographic information, social media tools and usage, and the five knowledge-sharing dimensions. An English/Arabic version of the questionnaire was posted on Google Docs (an online tool that enables users to create their own Web-based surveys). In the questionnaire, people were asked to provide their basic demographic information first and then to answer questions about each dimension. Because the study was set up such that all questions must be answered before being able to proceed to the following section and to make the final submission at the end of the questionnaire, all questionnaires collected by this research were complete.

5. Results and analysis

The data analysis was carried out using the Statistical Software Package for Social Sciences (SPSS) to compute all the data gathered from the questionnaire. The techniques of analysis used in this study were descriptive (mean, standard deviation, frequency, percentage), and pie charts were used to present a summary of the data collected. The average reliability coefficient for this research was used to ensure that measures of the factors were reliable. After analyzing the data, the average reliability coefficient (Cronbach's Alpha) for the five dimensions of knowledge sharing in the survey (questions 8–32) was found to be 0.777, which exceeded the recommended level of 0.70. This indicated that the reliability of the factors was acceptable for internal consistency. A two-week period was allocated for collecting participants' answers to help us identify the usage of social media tools in knowledge sharing inside CCIS culture.

5.1 Demographic Analysis

Almost two-thirds of the respondents (65.4%) were between the ages of 25 and 35. The respondents were categorized into three educational levels. Those with a PhD degree were the majority of respondents (50.9%). Of the participants, 80.0% were full-time faculty members, while 10.9% were researchers, and 9.1% were staff members. By department, 29.1% were from each of the Computer Science and the Information Technology departments. Another 21.8% belonged to the Information System department, and 20% were in Software Engineering department. The demographic information of our study sample is shown in Figures 1–4.
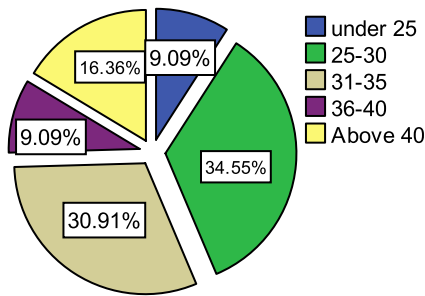
Figure 1: The participant age distribution
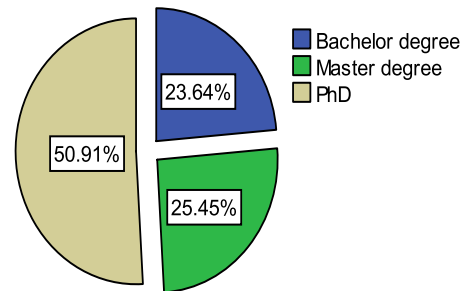
Figure 2: The participant educational level
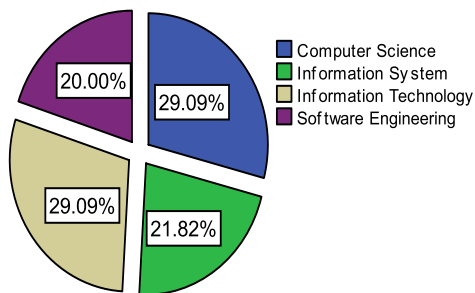
Figure 3: The department the participant belongs to
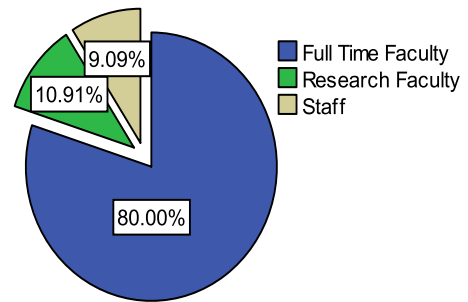
Figure 4: The participant occupation distribution

5.2 Social Media Tools and Usage Analysis

As seen in Figures 5 and 6, more than half of the sample (53.2%) was expert in using social media in sharing knowledge inside CCIS, and the remaining 46.8% considered themselves fairly experienced. A vast majority of respondents (85.5%) used social media tools for knowledge and information sharing in CCIS.
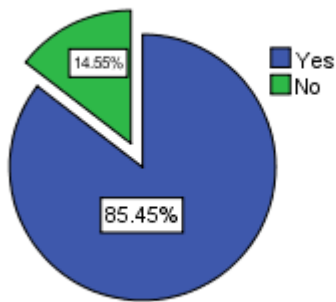
Figure 5: Do you use social media tools for knowledge sharing?
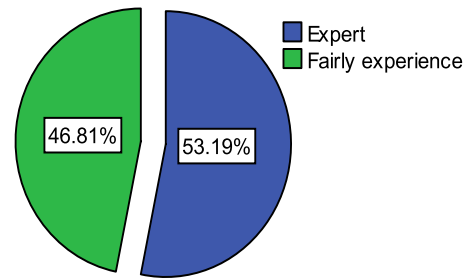
Figure 6: What is your experience level in using social tools?

Table1 shows that YouTube was the top-ranked social media tool used by CCIS members for knowledge sharing—68.1% of all participants. Twitter was second with a 61.7%. Delicious was the least used social media tool for knowledge sharing in CCIS at 4.3%. A summary of the social media usage is in Table 1.

Table 1: Which Social media tool do you primarily use to share knowledge?

Which Social media tool you use mostly to share knowledge?	YES	
	Frequency	Percent
You tube	32	68.1%
Twitter	29	61.7%
LinkedIn	28	59.6%
Wikipedia	28	59.6%
Skype	27	57.4%
Facebook	24	51.1%
Blogs	20	42.6%
SlideShare	17	36.2%
Delicious	2	4.3%

5.3 Analysis of the five dimensions of knowledge sharing

Tables 2, 3, 4, 5, and 6 highlight the descriptive statistics obtained from the participants' survey responses. They contain the frequency and corresponding percentage of the study population that chose a certain alternative among the five predetermined responses. The subsequent columns express the mean, standard deviation, and rank. The mean and standard deviation are derived from the number of responses across all five predefined responses. The rank is derived from the mean, where the lower rank refers to the statement with the highest level of agreement by the study participants.

5.3.1 People

The top-ranked statement in this section of the questionnaire, with a mean of 3.70 and a standard deviation of 0.954, is the one related to sharing information with coworkers from the same department. The high value of its mean indicates that the participants agree to the importance of the statement. A total of 72.3% of all participants agreed and strongly agreed that sharing knowledge usually take place within one's close circle; only 55.4% of all participants agreed and strongly agreed on moving knowledge outside the small group and sharing it with coworkers from other departments. As presented in Table 2, exchanging information and knowledge with coworkers from other departments ranked in third and last place, with a mean of 3.40 and a standard deviation of 1.056.

Table 2: With whom does the sharing take place?

Statement		Fully Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Fully Agree (5)	Mean	SD	Rank
I share information with co-workers from my own department.	F	1	6	6	27	7	3.70	.954	1
	%	2.1	12.8	12.8	57.4	14.9			
I exchange information with co-workers from other departments.	F	1	11	9	20	6	3.40	1.056	3
	%	2.1	23.4	19.1	42.6	12.8			
I exchange information with external professionals.	F	1	4	9	29	4	3.66	.841	2
	%	2.1	8.5	19.1	61.7	8.5			

5.3.2 Type of Knowledge Shared

As presented in Table 3, almost three-quarters (72.3%) of all participants agreed or strongly agreed with the statement, "I inform others on how, what, and where they can find information." with a mean of 3.79 and a standard deviation of 1.062, this statement is regarded as more important than other statements in this section. This result contrasts with the 10.7% of respondents who disagreed or fully disagreed with sharing with others how, what, and where they can find information. Sharing manuals and explicit knowledge in CCIS departments was last among the statements respondents agreed with in this section, with a mean of 2.89 and a standard deviation of 1.165. Only 38.3% agree or strongly agree with the statement, "I share manuals and other information about my job," while 38% do not believe this.

Table 3: Type of knowledge being shared

Statement		Fully Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Fully Agree (5)	Mean	SD	Rank
I share manuals and other information about my job.	F	7	11	11	16	2	2.89	1.165	5
	%	14.9	23.4	23.4	34.0	4.3			
I share professional information from newspapers, magazines, and television.	F	2	5	6	28	6	3.66	.984	3
	%	4.3	10.6	12.8	59.6	12.8			
I share successes, best practices, and failures about my job.	F	4	8	13	19	3	3.19	1.076	4
	%	8.5	17.0	27.7	40.4	6.4			
I inform others on how, what, and where they can find information.	F	3	2	8	23	11	3.79	1.062	1
	%	6.4	4.3	17.0	48.9	23.4			
I share what I have learned in training and education.	F	2	5	9	21	10	3.68	1.065	2

5.3.3 Willingness to and Awareness of Sharing Knowledge Via Social Media Tools

As Table 4 shows, 68.1% of all participants agreed or strongly agreed that colleagues are aware of the social media tools available to them to share their knowledge and information. On the other hand, only 4.3% of the participants were in disagreement or full disagreement with the statement. It came in first place, with a mean of 3.79 and a standard deviation of 0.750. Regarding the willingness of colleagues to share their knowledge and information, 44.7% of all respondents indicated that colleagues are willing to share. An additional 4.3% feel the same with a stronger assurance; 27.7% are neutral on this topic; while a combined 23.4% don't feel such willingness, with disagree and strong disagree choices. It came in last place, with a mean of 3.26 and a standard deviation of 0.966.

Table 4: Awareness and willingness to share knowledge using social media tools

Statement		Fully Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Fully Agree (5)	Mean	SD	Rank
Colleagues are willing to share their information.	F	2	9	13	21	2	3.26	.966	3
	%	4.3	19.1	27.7	44.7	4.3			
Colleagues are aware of the social tools available to them to share their information.	F	0	2	13	25	7	3.79	.750	1
	%	0	4.3	27.7	53.2	14.9			
Colleagues are convinced that these tools could help them to share their information effectively.	F	0	2	18	22	5	3.64	.735	2
	%	0	4.3	38.3	46.8	10.6			

5.3.4 Motivations to Sharing Knowledge Items Via Social Tools

According to Table 5, almost all (93.6%) participants agreed or strongly agreed that they enjoyed helping others by sharing their knowledge and information. In addition to enjoying helping others by sharing knowledge, the ease and simplicity of using social media tools is a critical motivation factor in knowledge sharing via these tools. Consequently, 80.9% of the sample found it very easy to use social media tools; whereas 2.1% of them had a contrary opinion. Both statements were first place among participants' choices, where the average mean was 4.15. The statement, "I want to show off my experience," scored the lowest mean (2.98) across all seven statements in the motivations dimension; it, therefore, ranked as the least effective motivation factor, with a standard deviation of 1.032. There was an even division of 36.2% each among participants who agreed or fully agreed with this statement or had a contrary opinion.

Table 5: Motivation factors to share knowledge via social media

Statement		Fully Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Fully Agree (5)	Mean	SD	Rank
I enjoy helping my colleagues by sharing my information.	F	0	0	3	34	10	4.15	.510	1
	%	0	0	6.4	72.3	21.3			
Using social media (forums, blogs, and wikis) is easy for me.	F	0	1	8	21	17	4.15	.780	1
	%	0	2.1	17.0	44.7	36.2			
My links to other colleagues from all professions could be improved if I am seen to share my information.	F	0	1	11	30	5	3.83	.637	4
	%	0	2.1	23.4	63.8	10.6			
I am confident in my ability to provide information that other employees would consider valuable.	F	0	1	8	35	3	3.85	.551	3
	%	0	2.1	17.0	74.5	6.4			
If my participation in information sharing was recognized by colleagues and superiors in the college, I would be more motivated to share my information.	F	0	4	6	27	10	3.91	.830	2
	%	0	8.5	12.8	57.4	21.3			
I want to show off my experience.	F	3	14	13	15	2	2.98	1.032	6
	%	6.4	29.8	27.7	31.9	4.3			
I want to receive financial rewards in return for my information sharing.	F	3	11	17	10	6	3.11	1.108	5
	%	6.4	23.4	36.2	21.3	12.8			

5.3.5 Barriers to Sharing Knowledge Items Via Social Media Tools

The statement, "It takes too much time and effort," scored the highest mean (3.53), and it placed first among statements in the barriers dimensions, with a standard deviation of 1.100. Among participants, 57.5% agreed or strongly agreed that the main barrier to knowledge sharing via social media tools was that it takes too much time and effort; 25.5% of them were of a contrary opinion. Table 6 shows that 91.5% of all participants disagreed or fully disagreed with the statement, "I don't know how to use social media". Only 2.1% believe

otherwise, and 6.4% were neutral. This statement was last, with a mean of 1.53 and a standard deviation of 0.804.

Table 6: Barriers to knowledge sharing via social media

Statement		Fully Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Fully Agree (5)	Mean	SD	Rank
It takes too much time and effort.	F	0	12	8	17	10	3.53	1.100	1
	%	0	25.5	17.0	36.2	21.3			
I am afraid that other employees might claim my ideas as their own.	F	2	8	14	18	5	3.34	1.027	4
	%	4.3	17.0	29.8	38.3	10.6			
I feel insecure about how my information might be received and understood.	F	0	14	14	15	4	3.19	.970	5
	%	0	29.8	29.8	31.9	8.5			
I don't believe that I can get good quality information from social media.	F	4	20	11	10	2	2.70	1.041	3
	%	8.5	42.6	23.4	21.3	4.3			
I don't think that my information is important enough.	F	4	26	8	8	1	2.49	.953	6
	%	8.5	55.3	17.0	17.0	2.1			
I am afraid of criticism from other employees using social media.	F	3	20	15	4	5	2.74	1.073	2
	%	6.4	42.6	31.9	8.5	10.6			
I don't know how to use social media.	F	28	15	3	0	1	1.53	.804	7
	%	59.6	31.9	6.4	0	2.1			

6. Conclusion

Social media tools can support the process of knowledge sharing and exchange in any organization because they permit easy connection and instant communication. For this reason, the major contribution of this research is to explore the usage of social media tools in knowledge sharing in CCIS in Saudi Arabia. The study shows that respondents had a positive attitude about sharing knowledge with one another via social media tools. More than 85% of those in CCIS use social media tools for knowledge sharing. The top-three tools used are YouTube, Twitter, and LinkedIn, with the percentages of 68.1%, 61.7%, and 59.6%, respectively. Almost three-quarters of those in CCIS (72.3%) believe that sharing usually occurs in close circles, such as among coworkers from the same department; more than two-thirds (68.1%) were aware of the social media tools available to them to share knowledge and information.

The study also shows that there are motivational factors that affect knowledge sharing in CCIS. In particular, the enjoyment of helping others when sharing knowledge via social media tools, the ease of using those tools, and the recognition by colleagues and superiors of participation in knowledge sharing are the three most effective factors that motivate the use of social media tools to share knowledge inside CCIS. On the other hand, those in CCIS don't consider financial rewards and showing off their experience as significant factors in motivating people to use social media to share knowledge inside CCIS. Taking too much time and effort is considered a significant barrier to using social media for knowledge sharing in CCIS. In this study, however, not knowing how to use social media did not influence knowledge sharing and was never considered a significant barrier.

The study has some limitations, one of them being that we did not distinguish among the different occupations in CCIS and in which context people in these occupations share their knowledge. For example, does the administration staff use social media tools in knowledge sharing as much as the PhD holder? Does it have the same content, context, and purpose? Although it is an exploratory study that provides first insights into the CCIS sharing culture, we think the results would better reflect the CCIS community if we had used a larger sample size. Another limitation is that we did not distinguish our sample based on gender. Another study might find some interesting differences between males and females in using social media tools in knowledge sharing.

Further investigation is warranted on the nature of shared knowledge content in CCIS, as well as a comparative analysis and visualization of shared social content among different social media tools. It also would be useful to explore the impact of video content in the knowledge-sharing process.

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The Use of Social Media In Higher Education Learning: Swot Analysis of Using Social Media for Learning

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Abstract: Recently, there has been an extensive interest to explore the capabilities of using different forms of web based learning technologies to support face to face teaching. Despite the great value and effectiveness of e-learning, the realities of the current practice teaching in higher education remain one-to-many lecture. Today, the awareness surrounding social media has generated a lot of thought on exactly how it should be used in a higher education setting. Incorporating this technology; which is user-driven and easy to use; into higher education will be an extra edge in enhancing students' learning. Therefore, the main aim of this study is to develop a conceptual framework based on the past theoretical review in order to cover the gap and contribute to the body of knowledge in expatriate literature. Based on the proposed framework, this paper invites researchers to empirically test the suggested propositions in order to further strengthen and develop understanding about the use of social media in higher education. Design/methodology/approach – The review of past research is used to develop a conceptual framework.

Keywords: Social media, Web-based learning, Higher education and Students' learning and engagement

1. Introduction

In the literature, several learning theories exist. The most well-known thought about how learning takes place is constructivism. According to this theory, learning is an active process of knowledge construction that occurs and is demonstrated in social contexts (Piaget, 1951; and Bruner, 1966).

In the past few years, social media plays a major part in learning. Students use social media to contribute to academic activities, where they share their learning experience and interact with other students (users and peers) freely. Social media technologies have both audio and visual abilities which comprise of web-blogs, Wikipedia, social bookmarking, media sharing space, Rich Site Summary feeds, micro-blogging sites, Facebook, and LinkedIn with the potential to support interaction and communication (Armstrong and Franklin, 2008). With the help of information technologies, students are able to socially interact within their peers while they are able to gain more knowledge and improve on their weakness. Interaction is the main linking pin between social media, information technology, and learning.

Considering the importance of the mentioned main linking pin, a number of studies have been done to show the increasing use of social media in higher education (Arnold & Paulus, 2010; Bennett et al., 2012; Cole, 2009; Hurt et al., 2012, Lederer, 2012; Liu, 2010).

Whether social media can be of benefit to the learning process has been a topic of discussion in the last decade. Social media has the promise to revolutionise both teaching and learning in higher education. With the popularisation of the social media, interaction among people in which they create, share or exchange information and ideas in virtual communities and networks are among the multiple resources that have become widely available to students. It is generally well known that social media are being used and that students appear to welcome the technology, but does this use and enthusiasm translate into perceptions of increased learning and increased teaching effectiveness?

To answer this question, this paper will address the impact of social media on the learning process in higher education. Therefore, an explorative study on the literature will be conducted to construct the conceptual framework of the impact of social media on the learning process in higher education. SWOT analysis will also be conducted to enhance the structure of the conceptual framework.

2. The New Information Technology Era

According to Lukman and Krajnc (2012), the traditional method of learning and teaching has been used in higher education for many decades. With the traditional learning, lecturers transfer knowledge to students in lecture halls, the teaching is deeply teacher-centred where students are passive receivers. The introduction of information technology into the classroom has come with promises to change the passive learning approach by introducing interactive and dynamic capabilities into the classroom.

The use of information technology has brought new changes to the teaching and learning processes (Fong et al., 2014). The first is an increase in the amount and type of technology resources that are available to instructors and learners. The second is the shift in learning strategies that the flexibility of information technologies affords to teachers and learners.

Information technology tools, such as social media and Web 2.0, help to boost the learning process of students. According to Shang et al. (2011), since the arrival of these tools especially into education, the processes of learning developed by students are now changed as they can socialise, externalise, combine and internalise (Shang et al., 2011). This indicates the importance of information technology and student's need to use these technologies more as it helps students to interact, share information and resources, as well as to contribute to the contents.

These emerging technologies are not a technological alteration that occurs in isolation, nevertheless falls in a form which recognises learning as the outcome of the communication and collaboration of individuals and places, taking students to be the heart of the process. Thus, it is now understood as a tool that facilitates model alteration in the process of learning (Wu et al., 2010).

2.1 Social Media

Living in a world of constant change, the means of communication have evolved from mere face to face communication, telephone, telefax to short message services (SMS) reaching to up to date instant messaging. Social media has become an important part of the digital age, as a means of communication. It is defined as "…forms of electronic communication (as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos)" (Merriam-Webster Online Dictionary, 2011).

The growth of social media technology has been significantly used in gaining knowledge from numerous resources. These technologies allow people to create, share content and interact with other people. Kaplan and Haenlein (2010) highlight the arrival of social media as ground-breaking. This implies that social media is important in learning as it helps to support student to publish, share images or useful resources, audio and even videos. University students are exposed to these technologies in many aspects of their lives. Social media is a group of internet applications that allow the creation and exchange of user-generated content (Kaplan and Haenlein, 2010). These tools allow students to work in a team, discuss, and share knowledge despite their location, and it is also the easiest mean for students to interact. As an example, students like to create information, re-create and then publish for others to see, which can be in the form of the video or audio on social media. They can also record their lectures and then post it on social media. Thus, the social media use in higher education learning is a web-based system that supports students-lecturers and students-students connections.

2.1.1 Classification of Social Media

Kaplan and Haenlein (2010) divide social media into different classifications: collaboration, community, creativity, convergence and communication. These characteristics help social media functionalities to be useful in learning among students. Social media functionalities include knowledge seeking, knowledge storing and discussion board, writing reflection, asynchronous discussion, synchronous discussion, the collaborative document, and sharing. These functionalities will later be combined with the learning styles of the students for further discussions.

2.2 The Use of Social Media as a Supporting Platform For Learning

With the help of social media technology, students spread information, express their ideas to people, learn new thing. Social media also saves time and reduces the cost of travel (Mitchell and Honore, 2008). Liu (2010)

identifies a number of social media technologies that are used for learning, i.e., Facebook, Wikipedia, YouTube, Bulleting Board, LinkedIn, Blogging, Twitter, Podcasts, Virtual Worlds, Rich Site Summary, StumbleUpon, Netlog, Delicious, Digg, Plurk, iTunes and Jaiku. In addition, YouTube, wikis and Facebook are the largest used social media for learning. Students use these tools for social engagement, communication, and for feedbacks within the ages of 18 to 29 groups on a daily basis (Liu, 2010). Realising the importance of social media use in learning process, students need to utilise these technologies wisely in developing their core skills.

Other communication media used by students include Virtual Learning Environment, such as student portal and online library, Skype, WhatsApp, forums for group discussion or debate, e-mail, bulletin boards, and chatting (Hrastinski, 2009). According to Margaryan and Littlejohn (2008), e-mail is mostly used by students to interact with their lecturers. They are more likely to have their email set-up at their personal devices, such as smartphones and tablets. This indicates that students are likely to use their own personal tools to discuss and be in contact with their friends on their study related matters.

Social media technologies help to deliver course content, while there are students who use it to connect with peer at least once a day. According to Hew and Cheung (2013), the main functionality of social media technology in learning is to asynchronous and synchronous. This indicates that with asynchronous media, students have more time for reflective thinking, while with the synchronous media people can instantly get feedback and comments. Hrastinski et al. (2010) show that students use the synchronous media more as it is more functional and useful in planning works. In general, social media is useful for learners to interact, as it is helpful in team work by allowing students to receive feedback instantly. Table 1 below depicts the examples of technologies used by students as defined by Hew and Cheung (2013).

Table 1: Examples of technologies used by students (Hew and Cheung, 2013)

Functionality	Technology	Example	Synchronicity
Online reflection	Weblog	Blogger	Asynchronous
Online collaboration	Wiki, Audio discussion board	PB wiki, Wetpaint, Wimba voice, Voicethread	Asynchronous
Social spaces	Social network	Facebook, Twitter	Synchronous
Repository	Video sharing, Podcast	YouTube, Houndbite, Chirbit	Asynchronous

2.3 Social Media Interactive Modes

The use of social media technologies enable student to interact and learn with each other.

Moore (1989), as shown in Bernards et al. (2009), defines the different types of interaction found in higher education e-learning, i.e., learner-content, learner-instructor and learner-learner (see Figure 1 below). These types of interaction imply that student, instructor (lecturer) and content form a symbiotic mechanism towards e-learning. The learner-content interaction enables student to online access of the course materials and other contents uploaded by the lecturer. As for the learner-instructor interaction, student may also interact with the lecturer through social media technologies in addition to e-mail; either for feedback, questions or other education related issues. The presence of social media technologies now allows students to interact with their teachers more often (Hrastinskin, 2009). With the learner-learner interaction, which is the most common mode of interaction supported by social media technologies, students can work in groups and enhance their learning using the online social media platform (Bennett, 2012).

Figure1: Illustrating the different mode of e-learning interaction (Anderson, 2008)
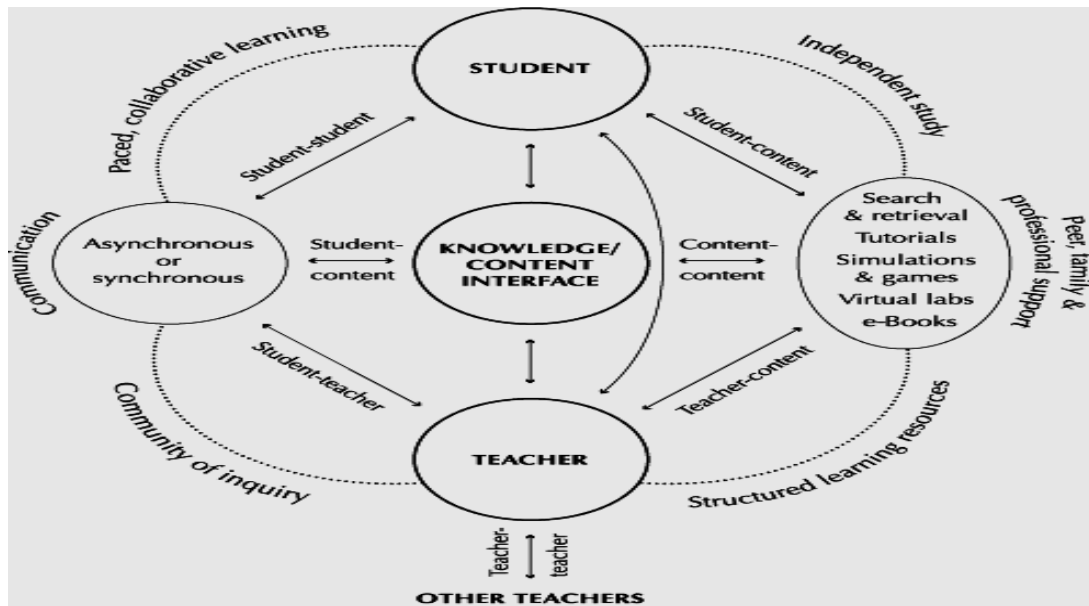
2.3.1 Group Learning

According to Kabilan et al. (2010), students create learning communities by working in groups to acquire understanding. Social media technologies enable the improvement of learning communities by providing online group work and online interaction, where students get the opportunities to produce accurate and innovative products using the provided tools from the social media applications, such as Facebook, blogs, YouTube, and podcasts (Frye et al., 2010; Lamb & Johnson, 2010). Students use technologies like Facebook group and WhatsApp group to keep themselves up-to-date, schedule group meetings, and other discussions without any time boundaries. Therefore, the active usage of effective interactions through social media gives chances for better learning by inspiring students in building recognised connection with alternative sources beyond the lecture hall (Fewkes & McCabe, 2012; Yu et al., 2010).

2.3.2 Personal Learning

With the personal learning, students use social media (such as blog, screencast sharing, presentation sharing, podcasting, YouTube) to manage their own personal learning at their convenient time and pace, to search for resource and increase their knowledge. As an example, students use blogs, which are essentially online journals, where a number of contributors participate by dialoguing about a particular topic or focus (Tess, 2013). Blogs also allow students to post personal content and comments, and to connect to other media sites (Du and Wagner, 2006).

3. SWOT Analysis of Using Social Media for Learning

The SWOT analysis is used to have a good understanding of the benefits of using social media technologies in higher education e-learning process (White et al., 2011). It evaluates the strengths, weaknesses, opportunities, threats of using social media technologies in the e-learning process for students. The strengths include the benefits of using social media in higher education e-learning. The weaknesses define the challenges the student faces when using social media in the learning process. The opportunities define the possibilities of social media to improve the learning process. Lastly, the threats define the risks of using social media in higher education e-learning. The SWOT analysis is conceptual and discussed in more depth as follow.

3.1 Strengths

Social media improves the learning process of the students by allowing them to exchange ideas, foster collaborations and discussions, and engage and interact with the online discussions (Lederer, 2012; Turkle, 2004). Lederer (2012) explains the vital benefits of using social media in higher education learning. First of all, social media helps students in increasing their engagement and in building their communication skills by enabling them to feel more comfortable expressing themselves in a less intimidating environment. Second, it

improves the communication between students and lecturers, while it also provides the media for contents of the course, as the lecturers can post their assignments, lecture notes, messages, updates, announcements on upcoming events, and other web and multimedia content. Third, students also use social networking sites for job hunting, where they may post a resume and search for potential employers (Lederer, 2012). These benefits indicate that through social media, the communication between students and lecturers is enhanced, so that the knowledge and information flow becomes easier and faster.

3.2 Weaknesses

Although social media helps to increase and aid how students learn through student interactions, there are challenges arise when social media is integrated into educational practices. In earlier research, it is assumed that university students are conversant with certain media they may use for learning, such as YouTube, blogs and Facebook. However, lecturers carelessly fail to offer the materials that are required to support student learning through the above mentioned social media (Cole, 2009; Väljataga and Fiedler, 2009). Arnold and Paulus (2010) conclude that though social media has been used for academic practice, students still use social media in the manner that may vary from the lecture plans. For example, off-topic discussions that are non-academic take place on social media because it is mainly designed as a technology for social networking (Lin et al., 2013). Also, as the ages of students increase, the rate of off-topic discussions gets higher (Lin et al., 2013). This indicates that mature students are likely to spend more time on social media for the discussions related to the course content, while the younger ones may likely engage in non-course content related discussions.

Social media can also have a damaging effect on the Cumulative Grade Point Average (CGPA) of students along with the time spent by students when preparing for their class or in their learning process (Annetta et al., 2009; Junco, 2012). This damaging effect might take place since social media offers stimulation that is too abundant and consequently might distract university students from finishing their assignments (Hurt et al., 2012; Patera et al., 2008). According to Lederer (2012), using social media in higher education learning leads to distraction. This implies that most students use technologies like Twitter, WhatsApp and Facebook to distract the attention of their peers.

3.3 Opportunities

Social media encourages continuous learning, as it saves time, cut down travel costs as well as convenience compared to traditional learning (Mitchell and Honore, 2008; Piccoli et al., 2001). The tools provided by social media help students to gain new knowledge by reading resources online and interacting with other peers and lecturers anytime and anywhere. According to Hrastinski (2007), the benefit of using social media "anytime, anywhere" is that students who have restrictions, either from their work or family, can still take part in learning, because it allows people to get information or interact with other students online. Online group work gives learners the opportunity to work with new people from diverse backgrounds to discuss and achieve new knowledge without meeting them in person (Curtis & Lawson, 2001).

With the help of social media through texts or communications based on audio or video, interactive websites and social networking, course mates, peers and friends can communicate with each other despite the distance (Hrastinski, 2007). With synchronous discussion devices, such as video, audio, and document sharing, students get fast and straight responses. The asynchronous discussion forum is commonly used by students because they have a higher degree of control and flexibility over what they learn. With the repository functionality, like YouTube, students are able to acquire new knowledge outside the lecture hall (Hrastinski, 2007). Furthermore, using discussion boards, students can easily use the discussions again at any time (Curtis & Lawson, 2001). Lastly, according to Johnson and Johnson (1996), there are also numerous benefits of using Social Media in collaborative or group work learning. They include: helping each other if required, exchanging of documents and resources, clarifying difficult knowledge, sharing knowledge that they have with others, providing and getting criticisms or feedbacks and reflections from other people (Curtis & Lawson, 2001).

3.4 Threats

Despite the benefits mentioned above, there are serious threats of using social media in higher education learning. According to Lederer (2012), these threats include cyberbullying, ownership issues, workload issues, the absence of student engagement, the absence of trust in peer response, and possible (technical) technology infrastructure problems. Although students use these technologies like social networking to connect with people, yet they still experience cyberbullying. Social media also does not encourage one-to-one

communication, that is, technology may create a safe harbour for students who are not comfortable in expressing themselves, hence these students are also missing out on the benefits of face-to-face communication (Lederer, 2012). This means that students may experience problems when using social media in learning, and they need to pay extra attention to their online activities.

4. Conceptual Framework

Considering the discussions above, the conceptual framework of how the social media should be related to the e-learning modes is proposed, as shown in Figure 2 below.

| **1. Social media** |
| 1.1 Online reflection |
| 1.2 Online collaboration |
| 1.3 Social spaces |
| 1.4 Repository |

→

| **2. Modes of E-learning** |
| 2.1 Student to Contents |
| 2.2 Student to Student |
| 2.3 Student to Lecturer |
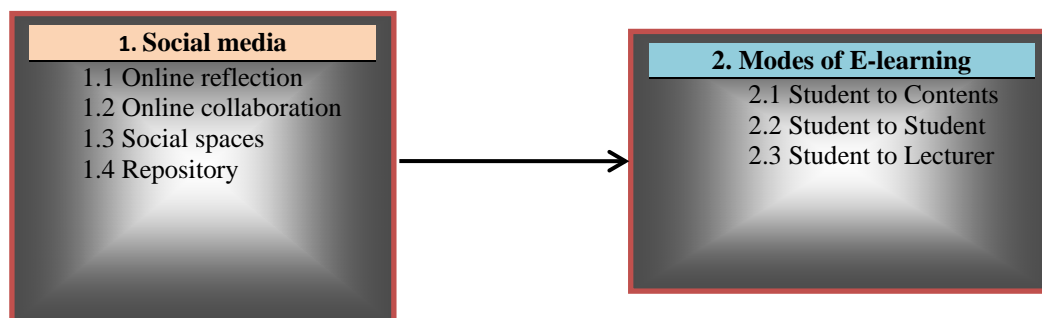
Figure 2: The framework of social media on the modes of E-learning

The above proposed framework is further defined, where the social media functionalities are linked to the student learning styles. A number of examples are also identified and suggested in defining the framework, as can be seen from Table 2 below.

Table 2: the connection between social media functionalities and students learning styles (based on Hew and Cheung, 2013)

Functionality	Technology	Example	Synchronicity	Learning style
Online reflection	Weblog	Blogger	Asynchronous	Verbal, Read
Online collaboration	Wiki, Audio discussion board	PB wiki, Wetpaint, Wimba voice, Voicethread	Asynchronous	Verbal, Aural, Read
Social spaces	Social network	Facebook, Twitter	Synchronous	Verbal, read
Repository	Video sharing, Podcast	YouTube, Houndbite, Chirbit	Asynchronous	Visual, Aural

5. Conclusion

It is clear that social media functionalities play an important role in interacting with students and their learning style. The question is how can students use social media to enhance their learning? According to Liu (2010), visual technology like YouTube helps students to know the learning content and to address their different learning style. This means that with the help of social media and knowledge management, students would be able to enhance their learning. Enhancing learning takes place when the students are able to identify the knowledge and also the information needed through social media.

Therefore, social media technologies would be able to enhance the learning process when there is a proper synchronisation between the (e-)learning modes and the choice of the technologies on the one hand, and the course contents and the learning style on the other hand. When the involved parties (lecturers and students) adopt the proper social media technology into the learning style with the relevant contents, the learning process would optimally benefit from the social media technology.

Since the framework is a conceptual, an empirical study needs to be conducted to test and adjust the framework when necessary. The empirical study will be conducted among the higher education institutions

and will achieve a broad range of students. The results will then be analysed and compared to improve the framework of the social media use in higher education e-learning.

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Egyptian Youth; Social Networking Sites and Civic Participation

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Abstract: An increasing number of young Egyptian adults continue to use and rely on Social Networking Sites such as Facebook and twitter. This trend contributes to a brand-new culture in our society quite popular as the "Digital Culture". The amplified use of social networking sites by youth in many nations requires further research and investigation on the matter. This "Digital Culture" had great consequences on societies in transitions to the extent that it is believed to be the backbone of the Egyptian revolution of Jan 2011 by empowering youth and citizens' collaboration through social networking sites. Consequently emphasizing the need for an investigation to discover *what happens when youth go online*. It is quite notable that the series of events that sparked Egypt in 2011 generated a rapid social change. Thus, this paper attempts to investigate what really causes young adults in Egypt to rely on social networking sites and if their reliance would have an effect on their civil participation. Surveying a sample of young adults aged 18-29, which make up more than half of the Egyptian population and represent the majority of users of social networking sites, this study attempts to extract the dimensions that yield to young adults' reliance on social networking sites and measuring its effect on civic participation. Through sequential mixed methodology, this paper starts with qualitative data analysis through focus groups and ends with a quantitative data gathering through questionnaires. Thus this research mixes qualitative and quantitative data analysis and gathering at more than one level, which accordingly yields to better contribution to theory and literature. The unique value of this paper stems from its contribution to understanding the behavior and attitude of a major segment of the population, the Youth. It also adds up to the body of literature regarding Web2.0 and its most popular services social networking sites. Moreover, it contributes to theories of political marketing and political science. On the other hand, this study offers the best practices in tackling practical implications by founders of civil initiatives and NGOs as well as to political candidates, public policy makers and the government. Conclusively, after the revolution burst in Egypt, the idea of political participation seemed novel to many Egyptians and specifically the young adults. Along with the novelty of political participation, new opportunities for the civil society have been unleashed. This paper argues that the reliance of young adults on social networking sites would positively affect their participation in projects and an initiative that addresses community needs and demands that would foster development by the Egyptian civil society. Lastly, this paper attempts to answer the following question: "Will the new phenomena of young adults' reliance on Social networking sites contribute to empowering the Egyptian society and bring about social change while in transition?"

Keywords: Social networking sites, civic, participation, youth, egypt and social media

1. Review of Web 2.0 and its impact on the society

New terms have entered our societies and one often hears about *interactivity* and a culture of *participation*. The birth of web 2.0 has lead to a whole new era of empowering users of those technologies and has lead to what is known as the "Revolution" of communication". These new technologies such as Facebook, YouTube and twitter have democratized media. Additionally, new roles are now being converged as former media consumers or audiences become active broadcasters and create the media themselves. It is important to note that participation in those media is not a result of new technologies and innovations, but rather it is the social demands that create this kind of technology (Burwell 2010).Social media and its networking tools have come to the political power game since 2001 in the protest in Philippines (Shirky 2011). In 2008, social networking sites (SNS) have received a great amount of resource allocation and attention from the two major US presidential elections candidates as a tool to reach out for young voters (Hayes 2008). Most importantly to this research SNS have been vital actors in the Arab springs since 2011 and to date. Specifically in Egypt, Facebook was said to mobilize marches, protests and enable collaborations that bring people together until today. The week leading to Feb. 1 "march of millions" in the anti Mubarak protest was characterized by protestors that said they joined spontaneously and that they have never been in a political activity before, thanks for the social media group in memory of an Egyptian named "Khaled Said" that was beaten to death. This group has brought together many parties and affiliations in the Egyptian society (Ghosh 2011). Even when the Egyptian

old regime tried to reduce communication of protest organizers and shut down the Internet, they have urged and provoked them to go more into the streets (Ghosh 2011).

According to Pew Internet Research (2012) more than half of the Egyptian populations are young adults aged 18 to 29 and the majority of SNS site users are young adults amounting to 50% of the total users. And of those using SNS 74% share views about community issues. Therefore, this research is interested in finding out more about the behavior of this segment regarding reliance on SNS when it comes to the community interest. Egypt is currently witnessing much transition and the community is in great need of collaborative initiatives and joint efforts. This paper approaches filling the research gap by answering the following research questions: Why do young adults in Egypt Rely on SNS like Facebook, YouTube and twitter? What are the effects of reliance of young adults on SNS such as Facebook, MySpace, or YouTube on Civic participation in Egypt? In the next section we review in depth the definition and previous studies regarding civic participation.

2. Civic participation

Heller et al (1984: 339) defined civic participation as 'the process in which individuals take part in decision making in the institutions, programs and environment that affect them'. Individual contribution or group collective action to solve community needs is another way in which civic participation was explained (Zukin et al, 2006). Activities of civic engagement include those not reared to government and elections, but yet address community needs (Zhang et al, 2010). For example, when volunteers come together to build a shelter for the community benefit (Zhang et al, 2010). According to their study, Zhang et al (2010) argued that political participation and civic participation yield to a better community and that many researches have suggested that they are both related to one another. According to Valenzuela et al (2009), from the wide range of activities used to describe both kinds of participation, it is concluded that the areas of participation can overlap. For instance, some people can be more politically active than civically active. Others might be active at both kinds of participations. Therefore, is it argued that there are no solid lines to differentiate both kinds and that it all depends on the environment that is being examined. Also Valenzuela et al (2009) have investigated whether social capital exists on Facebook and Burke et al (2011) have differentiated uses and users on Facebook with an aim of linking Facebook to social capital. In addition, many academic contributions included civic participation (Putnam 1995) or the volunteerism and involvement in community efforts as part of the definition of political participation (Furlong &Scheberle 2010). Authors argue that volunteerism remains the most challenging measurement aspect while studying political participation (unknown); especially that it is argued to be a strong determinant of political attitudes (Jennings & Zeinter 2003). However, in this study, the interest is that through civic participation or more active citizens lead to a better community and thus lead to social change. In the upcoming section the effect of the Internet and social media on participation of youth in the civic society is to be addressed.

3. Effect of Mass Media on youth civic participation

It has always been contentious whether media and its' different forms like the Internet reinforces changes to the society or affects attitudes and behaviors of it's' audience and users. Putnam (2000) argued that forms of media, as TV would absorb time spent on civic and political participation. However, others argued that it is not about the time spent on media or TV viewership that would contribute, but rather the content itself that would make the difference (MCleod 2000). One of the most prominent researches in this aspect is the study of Matthews and Prothro (1966) on of the relationship between media and political attitudes and behavior. Among the findings of this popular study it was proved that media viewership would have a positive relation on civic competency (Arthur 1983). In their study, Mathews and Prothro (1966) argue that attention must be paid to various aspects while studying this relation inducing the kind of media, exposure rate and motivation of exposure. No empirical research has been done to further allow understanding of this relation (Zhang et al, 2010) and generalized concepts would be that media does not prevent civic and political participation (Putnam 2000) and that difference in content would lead to difference in behavior.In addition, Zhang et al(2010) argued that the effect of media usage on political attitude and behavior is subject to the motives motivating people to search for political information, mentioning some of the studies that differentiate between information-oriented use and entertainment use (Moy et al, 2005). There are lots of debates about the impact of the social use of the Internet and its impact on people's real social lives.

3.1 Electronic citizenship

'Internet is a new form of citizen activism and civil society' (Ghanam, 2011: 20). Multiple activities and stimuli

have emerged from web 2.0; among the most famous is citizen journalism. The definition of citizen journalism is the collaborative action of gathering, reporting, analyzing and disseminating news done by a group of citizens (Gilmore 2006). With this kind of action and competencies, information required for a democracy becomes created (Leung 2009) and barriers to news are diminished (Hall 2001). Highlights were drawn to physiological empowerment, which is described as being an act in activities, related to community groups, political groups and associations in the neighborhoods and religious ones in order to help others (Leung 2009). He also mentioned ways of increasingly expressing opinions and ideas leading to increased citizen participation. It was noted that citizen journalism and personalized web content serve as a great way to increase physiological empowerment (Gilmore 2006).Ghanam (2011) in his report mentioned that when talking about citizen journalism, the platform is rather an important element of the discussion. The Internet access, lack of broadband, cell phones and text messaging are the most important to be discussed (Ghanam 2011). In the upcoming section we review in depth the effects of the mass media including the Internet and specifically its web 2.0 services on the engagement of citizens.

3.1.1 Internet, SNS and youth civic participation

In their article investigating the effect of the internet on attitudes and behaviors, Pollet et al (2011), grouped opinions under main two groups: very ''cyber-pessimists'' and ''cyber-optimists''. The first is for a positive relation and the second is against this argument. It is common in literature that the use of SNS and mobile communication has a positive impact on the offline face-to-face relationship and thus on social interaction (Jocobsen & Faste 2011). The Internet was also found to positively affect civic engagement and efficacy in the US (Jennings & Zeitner 2003). The adoption of Internet was suggested to be a positive predictor, while political use did not significantly prove so. Regarding efficacy and its nature of consistency over time, it was hypothesized that the Internet use and political efficacy should correlate (Hayes 2008). As for civic engagement, it was said to be dependent on the political culture of the society (Tsagarousianou 1998). Studies showed that those who use the Internet tend to be interested in politics. The information seeking motives were most likely linked to our political attitudes of trust in government, voting, party affiliation and efficacy than the entertainment motives and thus it depends on the type of information people are motivated to seek (Johnson & Kaye 2003).

With respect to the rapid growth of SNS and the rapid involvement of youth on them, in their study Baumgartner and Jonathan (2010) addressed whether the Internet will lead to a revolution in young adults' participation and engagement. This aspect of Internet's power to lead to a more engaged young adults generation has its supporters (Shah et al, 2005), yet many have disagreed (Davis 1999; Putnam 2000).In a study designed to investigate the effect of some forms of social media, not the democratic disclosure, the findings were 'characteristics of [online] discussion—exclusion of others, flaming, a great deal of anonymity'' make it ''problematic as a public discussion forum' (Davis, 2005: 119). It is important to note that no empirical research has addressed the relation between social networks and their affect on engagement, but some were done in a descriptive and non-causal setting (Gueorguieva 2008). The Internet has become an integral vehicle for civic participation (Shah et al, 2002). In addition, the Internet enables networking among the community members allowing more civic involvement (Zhang et al, 2010). Also, previous studies have proved Internet to be a positive predictor of civic engagement and more involved citizens (Jennings and Zeitner, 2003). Further, online activities and information search, opinion discussion and so lead to better civic engagement and involvements in the public policy (Davis 1999). Thus young adults in Egypt and their civic engagement are our interest in this paper by finding out the effect of reliance on SNS.

4. Methodology

This study employs a sequential mixed methodology in which both qualitative and quantitative data gathering are integrated and mixed at more than one level to yield to better understanding and results. First, this study starts with qualitative data collection through three Focus groups to investigate the dimensions of reliance on SNS. Second, 700 questionnaires (with a response rate of 51%) were distributed to measure effect of both independent variables on the dependent one as well as measure newly adopted dimensions of reliance on SNS quantitatively.As for Analysis, themed analysis was used for the results of the focus group study. After reliability and validity were run, correlation analysis was performed to quantify the direction of the relation between dependent and independent. Lastly, to interpret the demographic questions frequencies were conducted.

4.1 Variables of Study

This study is inspired by a collaboration of many of the recent studies in this area. The model researched in this study is based on a single dependent and independent variable. The independent variable is Reliance on SNS and the dependent is Civic Participation. The role of reliance on social networking is borrowed from Zhagn et al (2010) in a study that was conducted during the elections in the US, while the relation between social networks and social capital is adopted from Burke et al (2011) in a study on Facebook and social capital. As a result each variable assembled in this model has a strong reasoning for being studied in this research, below is literature for such support.

Reliance on social networking sites as Facebook, YouTube and twitter combined in a study of social capital yields to better understanding of behavior (Moddy & Paxton 2009). The ties and connection with family, friends and acquaintances created by using sites like Facebook will influence its users' social capital (Burke et al, 2011). There is a significant relation between reliance on social networking and civic engagement (Jennings & Zeitner 2003). Studies have revealed that social networks do affect social capital (Ellison *et al.,* 2007) in fact some have linked online communication and sites like Facebook to affect an individuals social capital (Burke et al, 2011). In this study, new dimensions contributing to reliance will be explored from the conduction of focus groups.

4.1.1 Conceptual and operational definitions of variables

In this section the conceptual and operational definitions for each variable are being outlined. *Reliance on social networking*; the term reliance refers for dependency or trust on Social networking websites which are "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system," (Body & Ellison 2007). *Reliance on SNS as the independent variable in this research* was investigated qualitatively through 3 focus groups. Through the questions listed below respondents were asked what constitutes their reliance on SNS especially when it comes to civic participation. These questions included; how often do you go online? What are you most likely to do online? What effects can emerge from the reliance on social networking? Why do we hear so much about those websites these days? When you gather with friends and family what are you most likely to talk about? Social media and rebuilding Egypt, what can you say about that?

*Civic participation refers to the kind of contribution of an individual or a group of people towards solving a de*mand in the community or society (Zukin et al, 2006)*. In this study, Civic participation* was quantified through a questionnaire instrument. To measure Civic participation, this study adopts a five point Likert Scale with a Cronbach Alpha equal to .743 (where 1 means never done this action and 5 means always done). The statements included; I have attended a local government board meeting dealing with community issues, I have gone to see, spoke to or wrote members of the local government about needs or problem, I have worked with others to solve community problems, I have took part in protests or demonstrations on a local issue, I have took part in forming a group to solve a community problem, I have you participated in any advocacy campaigns and I a member of community organizations.

5. Results

S*tarting with the findings of the qualitative themed analysis,* the determinants' of the independent variable reliance on SNS were extracted. The results of 3 focus groups reveal that young adults do rely on SNS due to two variables these are; *collective action on events* and *the new sense of community*. Table 1 below includes the two extracted variables, their definitions and their supporting themes. The two extracted variables proved reliable with a Cronbach's Alpha amounting to 0.934 and 0.580 respectively. Additionally, in focus groups SNS were expected to increase civic participation due to being a charity hub in which they get announcement, options and get connected to projects in an easy, free and timely way and where they can creatively donate online on SNS through games for instance. Additionally, SNS offers a transfer of online talks to offline actions in the civil society and makes it easier to recruit volunteers.

Table 1: The extracted variables and their supporting statements

Variable	Definition	Supporting Statements
Collective action on events	Due to SNS, they can learn about different social and political events, check out on who is joining from their contacts, promote them and benefitting from the group for the sake of the event	SNS help me to know about events. SNS helps me know who will join events. SNS will help me promote events.
New sense of community	Practice of a social life, connections and differentiation in platforms based on personal and non-personal habits, doing simply everything.	I enjoy my social life on SNS. SNS helps me connect with more people. I use certain SNS for personal life only. I use certain SNS sites for political use only

As for the findings of quantitative study, the positive relation between reliance on SNS and civic participation in Egypt was confirmed by the results of the correlation analysis and the value of the Pearson Correlation Coefficient that was equal 0.160. Thus, based on both analyses we can conclude that reliance on SNS by young adults would have a positive relation with civic participation in Egypt. To quantify the findings of the themed analysis, correlation analysis was conducted and resulted in a Pearson correlation coefficient for collective action on events equal to 0.392 and for new sense of community equal to 0.318. Therefore by integrating both qualitative and quantitative data gathering and analysis we can conclude that there is positive, moderate and significant relation between collective action on events and new sense of community and Reliance on Social Networking sites and that there is a positive relationship between reliance on SNS and civic participation. Hence this study contributes the model below in figure 1.

Figure 1: the proposed conceptual model.

5.1 Respondent Profile

In this study 56% of the sample responded that they do rely on SNS. With respect to age 84% were between 19-31 years old of which 52.4% were males. The majority of the respondents listed they were students with a percentage equal to 50.5%. Only 23.2% indicated they were members in organizations. 59% expressed they use the Internet daily and 37% use the wireless Internet connections to log online. When respondents were asked about their SNS use the majority 84.1% listed Facebook, followed by YouTube and then Twitter and lastly other websites. More than 60% of the Egyptian populations are less than 30 years old. Additionally, the majority of users of SNS are aged 18 – 29 with no gender differences. And since this study investigates the outcomes of reliance on SNS by young adults aged 18- 29 in Egypt thus, *the findings of this study can be generalized to the Egyptian population* (Pew Internet Research 2012)

6. Implications

According to the findings, Internet is becoming part of the day for young Egyptians. Mostly they connect to the Internet through wireless connections, which logically can be attributed to the fact that these are youth who log in through café Wi-Fi or on campus in their colleges. This study findings do confirms that young adults in Egypt rely on SNS. This means that they trust and depend on SNS. Thus, this implies that SNS to young Egyptians is not just entertainment, the general assumption that was taken on sites like Facebook before the revolution. On the contrary, young adults praise SNS for their abilities to bring them together and help them do positive change to the society. Precisely, the most agreed on SNS in this research and thus the most commonly used among young Egyptians was "Facebook". This means that Facebook and the way it is designed supports the predictors of reliance on SNS in Egypt.*This study infers that young adults in Egypt believe that SNS* master the promotion and spreading of events. According to respondents, this is the platform where people know about different social and political events, check out who is joining from contacts and even promote them. This was surely evident during the Arab spring where each protest was coordinated and spread through

Facebook and the like. In particular in Egypt everyday until today a new event is created with a new theme to bring about coordinated efforts to help the community. These included blanket collections in winter and fundraising for different causes.

Through this research it is implied that young adults in Egypt believe that they can simply do everything on SNS, in particular, the practice of a social life, connections, and differentiation in platforms based on personal and non-personal habits. The model of perceived benefits of SNS sites supports this assumption (Zhou 1991). Also, Egyptians are known for being social and love gathering and so this study implies that they use those sites to connect with other acquaintances weather locally or around the world. Also, it was mentioned in the discussion that due to the growing number of Egyptians living abroad, more and more people use websites like Facebook to stay tuned with their local friends and local news while being abroad. This can specifically be enriching for civic participation since there can still be participation while outside Egypt.

This study implies that the civil society and participation can be enriched among young adults in Egypt through more usage of SNS. This also means that more civil organizations and initiatives are available on those sites and have succeeded in stimulating engagement among young adults. It reflects that those websites help to form groups, promote and collect donations for various service ideas in Egypt. Accordingly, young Egyptian adults would trust SNS to participate in more projects and campaigns that help address community needs and concerns and thus those SNS attracts citizens to civil action especially among the young adults. Therefore, the implication is that the civil Egyptian society is affected by usage of SNS among young adults.

7. Academic and practical contribution

This study offers a contribution to the theories of political marketing by understanding more about the engagement of young adults especially after the very low participation of youth in the last constitution referendum in January 2014. Additionally, most studies conducted to investigate civic participation are conducted in countrieswith different economic, political and societal conditions than Egypt and most countries in the Middle East. Therefore this study offers a solid contribution by comparing different civic societies. Even thought many studies have taken place about social media to date very few studies have explained why do young adults rely and depend on SNS when it comes to civic participation and thus this study contributes two different dimensions that constitute reliance on SNS by young adults in Egypt.

From a practical point, to candidates, activists and civil groups, this study is among the very few conducted in this area. Therefore, more insights are given to the domain practitioners and allow them to capitalize on the findings in their upcoming strategies and online campaigns. Especially it allows them to realize the relation between tools like Facebook and participation various activities. With a newly born civil society, this study offers advice and guidance to newly starting NGOs by enriching them with knowledge regarding the apaches towards engaging more young Egyptian adults in the local community through SNS. Also, it is recommended by civil activists to utilize the findings of this research when targeting campaigns of advocacy and communication in order to be able to tailor it to their targets. The fact that young adults turned to rely on SNS for collective actions on event poses a recommendation to civil groups to target to recruit volunteers online through SNS where many young adults rely on it and which stimulates civic participation among young adults in Egypt.

8. Limitations and future research

Correlation study was conducted and so it only examines relation among variables and thus does not explain if actual increase in civic participation will happen due to reliance on SNS. Additionally, what causes young Egyptian adults to rely on SNS is a broad question that might not be answered through only three focus groups. The statements used to measure civic participation are all adopted from foreign literature of countries with different circumstances and so the kind of activities might not be the same in Egypt. This study does not take into account the fact that political variables might moderate the relation between reliance on SNS and civic participation. Therefore, this should be considered in the upcoming studies. According to those limitations potential opportunities include investigating citizen participation as being affected by reliance on various media channels. For example will mobile Internet affect citizen participation differently? Additionally this study can be conducted on longitudinal basis, where data can be collected twice before and after the exposure to certain civic events to be able to gather more insights in the topic.

9. Conclusion

The uniqueness of this study emerges from the fact that it has shown the power brought about with the wide spread of reliance on SNS in the creation of a new culture of participation among citizens in Egypt. Through sequential studies this study was able to investigate what causes young adults in Egypt to use SNS and thus the dimensions that constitutes the reliance of young adults on SNS in Egypt. Civic activists through this study were advised to consider social media in their marketing and communication especially in this era of Egypt with major elections on their way. Also, the government was recommended to make use of SNS and to start communication with the young generation that has lead the revolution and that composes more than 61% of Egypt. Companies and marketers were given insights into integrating this tool to their campaigns. And, this study has provided through its limitation a series of suggestions for future research. In times when Egypt is most need of collaborative action this study has answered the thought of *"what happens when every body comes together on social networking sites in Egypt?"*

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Virtual Risks of e-Participation in Online Learning Environments and Dialogue

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Abstract: As technology and workplaces change and evolve, new policies, procedures, and participation are changing also for today's workforce. While many organizations are starting to realize the value of their intellectual capital, especially their human capital, they have discovered that better communication and interaction skills are necessary in order to increase productivity, morale, and participation in one's organization. The levels of participations for some employees can vary greatly, but human resource professionals are realizing that the use of technology might add yet another layer of obligation on the part of the employee, but it may also provide a powerful tool to engage and motivate them as well. In particular, there are three types of participation in today's workplace: in-person participation; online participation, and social media participation. Each of these form of participations require more activity and interaction from employees than in previous decades, but they also help to fill in a void for some individuals in terms of socialization in the workplace. Thus, this paper will focus on employee participation in both "work" activities and meeting of organizational goals, but also, it will also examine how the communication and engagement of employees have changed with the use of technically, specifically, the use of social media.

Keywords: Virtual risk, e-Participation, Social Media, Workforce, Social Capital, Networking

1. Introduction

Adaptation to changes in the real-world setting is important for all types of stakeholders, but internal stakeholders need to understand how certain changes will affect them in the context of their organization and its goals, as well as the impact with external stakeholders. As technology and workplaces change and evolve, new policies, procedures, and participation are changing also for today's workforce. While many organizations are starting to realize the value of their intellectual capital, especially their human capital, they have discovered that better communication and interaction skills are necessary in order to increase productivity, morale, and participation in one's organization. The levels of participations for some employees can vary greatly, but human resource professionals are realizing that the use of technology might add yet another layer of obligation on the part of the employee, but it may also provide a powerful tool to engage and motivate them as well. In particular, there are three types of participation in today's workplace: in-person participation; online participation, and social media participation. Each of these form of participations require more activity and interaction from employees than in previous decades, but they also help to fill in a void for some individuals in terms of socialization in the workplace.

2. Background Overview and Research Methodology

While many have questioned the importance and relevance of social media in the workplace, it may be prudent to start off with a review of the literature in terms of the subject of social media and its impact in today's workplace. This paper will examine the literature in terms of employee participation in both "work" activities and the meeting of organizational goals, but also, it will examine how the communication and engagement of employees have changed with the use of technically, specifically, the types of uses of social media. In fact, while some organizations have focused on competing with other organizations, whereas, other organizations have focused on competition with others and engaging and motivating their staff with various types of social media to perhaps attract more of their attention towards the company using this new approach to marketing and communicating with others, both internally and externally. While some forms of social media have established themselves into the archives of some organizations and frontline of others (i.e., Facebook, Twitter, LinkedIn, etc.), companies need to be mindful of their use of such media, as well as maintaining proper managerial control in the form of established policies and procedures.

Consequently, it should be noted that while many social media formats and programs are relatively new, as compared to Facebook, the literature has taken on a more generic framework with key terms, such as engagement, motivation, socialization, and more to look at the intellectual, as well as the social impact of this new segment of virtual work and personal engagement. Thus, this paper will look at research questions. First, is there a valuing of intellectual capital and engagement of the use of social media in today's workplace?

Second, can social media be used as a strategic tool for sensemaking in understanding today's technological advancements and applications? Third, is social media more of an implied layer of commitment on the behalf of today's worker, rather than an expressed obligation by the employer? Finally, what are some of the best practices used to address the uses of social media in the context of e-participation and trust issues?

While the business world struggles with the use of newer forms of technology and the introduction of various forms of social media, the academic community also is engaged in their own strategy to adapt marketing and educational efforts to use this new line of social engagement and contact. Garrett (2011) addressed the application of social media for achievement in the context of online education. He segmented the approach for online programs into three areas: connect, dialogue, and reflect. In the connect phase, the program can use social media to: 1) to reach out to current, past, and future students and instructors; and 2) to build better online communications and bridges from the classroom to their space. In the dialogue phase, they can use social media to: 1) to motivate and encourage more participation from all; and 2) to continue discussions from the classroom to real life applications (their world). Finally, in the reflect phase, social media may be for the moment, but can we take what we learn, use, and share and use it later. However, it should be noted that the adjustments/modifications in the online learning environment is based on the growing need to how business in today's marketplace is using newer forms of technology in terms of motivation, engagement, and productivity, especially in the context of competing in today' economy.

3. Literature Review of Social Media in Business and Technology

While many organizations and companies strive in a highly competition market, they have had to adapt and incorporate various forms of technology in order to keep abreast of developments, changing events, and addressing the issues of workforce recruitment and development. To add another layer to the use of technology in today's workplace, issues of policies, procedures, and processes, as well as participation requirements for their workforce.   Coupled into this equation of balancing workforce and marketplace needs and wants, the introduction of social media has added an additional segment to today's business entities.

As the advent of social media played upon the curiosity of individuals at first, many social media operators started to realize the growing market of businesses and their need for a better communication media. While electronic mail has been the most acceptable form by employees to communication in businesses, many employees have been limited in their ability to express themselves in the context of their organizational rules, regulations, and overall policies in terms of the business versus personal usage of their company electronic email. With the introduction of social media, some organizational members have been slow in the acceptance of the change of communication channels/media, as well as appreciating the value of new technology.

4. Impact and Valuing of Intellectual Capital and Engagement of Employees

As presented in the literature, it is apparent that that one common practice used by many organizations and businesses is the use of a new social type of engagement that can be accomplished with the organization's own Intranet called "communities of practice". Wenger (2006) noted communities of practice as being formation of "people who engage in a process of collective learning in a shared domain of human behavior . . ." (para. 3). These types of communities can help to nurture, create, share, maintain, encourage, develop, and evaluate all types of knowledge and value gained and realized through various activities, such as problem solving, sharing developments, documenting and working on projects. Further, these communities of practice can develop from a small informal group to a more organized and collective whole as deemed and valued as important by the overall organization and its management. Thus, more organizations and educational institutions are beginning to realize how important these communities of practices can be in terms of brainstorming, problem solving, as well as collecting, organizing, and management new knowledge from lessons learned in the workplace. Therefore, there is a need for social media as not only a form of communication, but also as a form of strategic tool to be used in the workplace in terms of problem-solving and brainstorming efforts among the various community members.

In terms of this need for sharing knowledge and applying it to other situations, it should be noted that earlier, Lave and Wenger (1991) wrote on the "generation and transfer of knowledge" inside these communities of practices as follows:

- "The transformation of knowledge and learning is tied to situated action. A large part of the daily generation, application, and internalization of knowledge is achieved during learning in practices.
- Learning in practice is delineated by the web of relationships between actors and takes place in a social and culturally constructed environment, the community.
- Learning in practice not only enriches individual knowledge but also the identities and roles of actors with the learning community. Newcomers learn from old-timers by the legitimation to participate in certain activities as part of the practice in the community. New members first participate as peripheral community members. By continual learning and social identity and role building" (Von Wartburg, Rost and Teichert, 2008, p. 3)

Along these lines of knowledge transfer, current practices in learning and sharing of these two items, members can help to promote their social identity not only among their own "self-contained" community membership, but also engage with other community members and external stakeholders. However, beneath this primary level of need for the use of social media, this is yet another level or layer that plays a role here in understanding the human element for the use of social media – making sense of this new social craving, trend, or technological wizardry. In any event, this next section will highlight the need for sensemaking and develop the discussion into another level of discovery.

5. Using Social Media as a Strategic Tool for Sensemaking of Workplaces and Technology

According to Weick (1995): "Organizations are a complicated collective network of individuals, each bringing unique skills, perceptions and beliefs into an organization and at times, putting the collective network into a state of flux. Cohesion within the collective net is established and re-established when members engage in acts of organization." (para. 1) Basically, Weick (1995) described how the process of sensemaking helps organizational members to understand the processes of the organization in the context of seven attributes. These attributes consist of "identity construction, retrospection, enactive sensible environments, a social nature, ongoing processes, extracted cues, and plausibility." (Weick, 1995, para. 3)

In such social and culturally constructed environments, employees, as organizational actors, may need to social construct and de-construct certain realities and probabilities in their daily work lives. As social creatures, employees need to interact with each other and try to understand events in their lives in term of sensemaking (Weick, 1995). They need to understand their role and function in the workplace and how they can achieve and retain their own standing in the workplace. Thus, Weick (1995) argued that sensemaking, in an organizational sense, is not done as a tool of discovery, but as one of invention.

Thus, we can view sensemaking as being grounded in identity construction or as a reflection of one's action or from enacted cues. Also, we can view employees as producing the environment in which they face action and affect others. For example, some workplaces may be domicile and never face any key changes in events or actions, and any major change in the employee's routines, beliefs, and work ethics On the other hand, there are employees, as well as organizational leaders and managers, who rear in the face of adventure and welcome any change that may be presented to them? Further, Weick (1995) stated that "identity construction is bound to attributes of retrospection and enactment. Retrospection depends upon previous action, knowledge, or belief as part of an ongoing process of reflection, interpretation and articulation through historical connections. Enactment plays a role in retrospection by shaping the environment of action, knowledge and beliefs." (para. 4) One way to improve upon their social standing and positioning in the workplace is through the use of social media as a form of sensemaking strategic tool. A key question to explore and examine is how the various layers of stakeholders feel either a sense of commitment or obligation when they asked to embrace new technology and whether there is immediate compliance or conflict.

6. Exploration of Social Media in Terms of Commitment versus Obligation

While work relationships and assignment completions become more evolved, as a result of changing technology, the level of complexities in the workplace has also increased. Some workers feel more disengaged today than ever before with the required interaction. According to eParticipation.eu (2013), "the use of online environments in the communication with citizens requires specific actions. Those actions are presented in five steps, such as: 1) expectations – backgrounds; 2) planning; 3) action; 4) communication; and 5) feedback-evaluation (para. 1). Thus, this paper will address the impact of social media in the form of e-Participation on the behalf of employees, employers, and other stakeholders. While participation in organization activities and events may be limited due to various internal and external factors, the impact of social media has helped to

increase more participation levels of organizational members and perhaps opened up a newer form of dialogue between management and the workforce.

As more organizations focus on their maintaining their own niche in today's competitive market, they are focusing on their knowledge management, learning organizational structure, networking opportunities, as well the development and nurturing of their own intellectual capital in terms of their human and social capital. Virtual teams/groups form their own online communities with a social need to exchange not only work information but to gain a sense of belonging in group pursuits, as well as identifying common problems, challenges, and basic needs and wants among themselves. Preece (2000), these online communities "consists of people who interact socially as they strive to satisfy their own needs or perform special roles; a shared purpose that provides a reason for the community; policies that guide people's interactions; and computer systems to support and mediate social interaction and facilitate a sense of togetherness" (p. 10). Juxtaposed to these viewpoints are the educational side and the online learning environment in which the educational community has begun their struggle to meet the ever-changing needs of these new learners and learning communities. Thus, many have seized the moment to help join the ever-changing evolution of learning and technology. In the field of business and management, educators have recognized the demographical changes of the student population. In a virtual environment, the student is not the traditional student seen in a classroom in previous years, but rather one that reflects a vast array of cultural differences and needs that require educators to help build "new learning paths" towards the creation of virtual learning communities. The commonality between the business and academic sectors is the use of best practices, especially with an emphasis on knowledge management. Therefore, these best practices have also identified the use of stronger communication skills and technology, namely, social media.

7. Review of Best Practices and Human Capital Issues with the use of Social Media

While many organizations may share certain knowledge management strategies among themselves, they have learned also the importance of sharing good ventures, knowledge bases, skills, strategies, and practices with others, as well as being on the receiving end of this process. Within the past several decades, the business use of bet practices has been evolving and gaining notable literature and accolades for its application in today's workplaces and academic environments. Jones (1993) described best practices as centered "on the very essence of good management: guiding employees toward greater productivity, liberating them from the burdens of disorganization without saddling them with restrictive bureaucracy, and helping them to overcome some measure of the troublesome flaws inherent in people and processes. These are the measures of effectiveness and efficiency (p. 11).

While we can see the influence of changing technology and diminishing workforce in the workplace has caused many human resource professionals to search for information and ideas on best practices in human asset management (Fitz-enz, 1997). As changes in technologies have occurred in the workplace, as well as changes in federal, state, and local laws, there has been a shift from these changes to human problems. Chin and Benne (1969) described this shift to the human problems as "dealing with the resistance, anxieties, threats to morale, conflicts, disrupted interpersonal communications, and so on, which prospective changes in patterns of practice evoke in the people affected by the change" (p. 94). Thus, those individuals involved in technological and human asset management work as Achange agents@ to help facilitate change in terms of best practices.

Fitz-enz (1997) described best practices as: "an enduring commitment to a set of basic beliefs, traits, and operating stratagems. These are the guidelines for an organization: the driving forces that distinguish it from all others" (p. 98). In 1990, The Saratoga Institute performed a formal research project on common traits of the best human asset management companies. The question that they used over and over with each participant was, "Who is good at _____?" The identified eight factors that appeared constantly in their study as: "1) value; 2) commitment; 3) culture; 4) communication; 5) partnering; 6) collaboration; 7) innovation and risk; and 8) competitive passion" (Fitz-enz, 1997, p. 100). They wanted to find out what was being done better in each of these factor areas. The study was designed to help them to identify what was being done right and if it was part of the individual's interaction with their organizational culture. Thus, this leads us to focus on what is being done right in terms of the role and function of social media in the workplace and how it impacts the human element, namely, the human capital.

We need to understand that socialization does not occur in a vacuum. Rather, in many open systems, socialization, just like learning, needs to be ever-changing, constantly modified, and in the case of human capital, it needs to meet a given objective(s). One of these objectives is to help engage, motivate, and socialize human capital in order to help maintain and increase their performance in the organizational setting. Thus, this leads us to another line of inquiry. How do people socializing in the workplace and sharing in a common goal or set of strategies to meet the organizational goals? Is there a need to work as a group and socialize or is this a passing trend?

While many organizations and institutions have realized that their intellectual capital is truly the most valuable commodity, they also must seize the opportunity to guide, nurture, and reward intellectual capital or they may lose out to their competition. This paper will focus on how many business entities are rethinking how they harness and nurture their intellectual capital and how they can engage them more to appreciate their value and encourage them to share more with their colleagues. The way in which they approach their intellectual capital and engage them is important, but yet they have to guide and facilitate learning and development with their employees and still have the employees feel a sense of autonomy and self-accomplishment. As more technology is introduced in to the workplace, there is a greater need to still connect, socialize, and engage all employees. Thus, we need to look at a newer form of engagement, socialization, and connection in the form of a technological creation referred to as e-participation.

8. Impact of Social Media Applications in Connection with E-Participation and Trust Issues

Kim and Lee (2012) proposed a theoretical model on e-participation and the process. This "model emphasizes the effect of the e-participation process on e-participant's trust in government is moderated by the extent to which e-participants are satisfied with e-participation applications and the quality of government responsiveness to e-participants' needs, e-participants' development through participation, their perceived influence on decision making, and their assessment of government transparency." (p. 2) As more entities strive for updating their various forms of connection with their employees, the issue of trust still has a hold over some employees and restricts their participation and contribution via the use of new technology.

If we look at Erik Erikson's first level of his Psychosocial Stages of Development, it focuses on the issue of trust versus mistrust (Knowles, 1980). Given this pre-conditional barriers in terms of one's learning experiences, the academic community needs to address this situation and how to rectify it for future learners. Another key event that has been part of the learning experience for many working adult learners is the use of virtual (online) learning. Thus, this paper will address several key questions.

- First, what are some of the pre-conditioned barriers to learning that adult learners may be prevented from considering or attempting to continue onward with future educational endeavors?

- Second, what impact has virtual learning have on today's working adult learners and their need to obtain education when there are other factors that may impede their ability to take Face-to-Face classes, but rather turn to virtual learning to meet their needs?

- Third, can virtual learning be used as a strategic tool to help these adult learners to overcome previous learning barriers in order to re-embark up on their educational endeavors and see learning in a different and more stimulating/motivating light?

Even though three questions may seem quite simplistic in their approach, they do impact each other and affect a learner's decision to consider or wait for educational pursuits. Finally, this paper will address a "game plan" for all current and potential virtual (online) instructors on how they can create a new "motivating and less abrasive" environment and help their learners to move from Erikson's noted first level of trust versus mistrust to another stage and perhaps see the value of education once more.

We need to consider that the level of trust that one may have with something being offered on-site versus something being offered virtual may be perceived in different ways. For example, social media may be embraced by many employees as a result of organizational communications or just by the novelty of this new technology. On the other hand some employees may be eager to use these various forms of social media as a result of experienced shared with them by friends, family members or colleagues. In any event, we need to consider that in the online environment, whether virtual teams or online courses, trust has a different contextual meaning, it is often referred to in terms of "virtual trust" and look at the various stakeholders (both

internal and external) in terms of their perceptions and interactions with others in this virtual environment. Therefore, what do we mean by virtual trust and how does it differ in the virtual environment? One way to view this is through a lens with various types of trust. Uslaner (2001), wrote that "Trust has a *moral dimension*—of ethically justifiable behavior as expectations. General trusters tend to have a higher ethical sensibility". We should look at another type of trust that is more useful, or perhaps exercised, by others that is known as swift trust. *"Swift trust"* may be unstable and fragile at times. For example, most adult learners need to need to establish quick trust patterns with their teachers, especially in the online environment. Along these same lines in the virtual business environment, virtual group members need to establish trust with their virtual manager, as well as their virtual members. Like trust in the face-to-face classroom and business world, this type of trust may not be easily gained. Also, there could be a growing need for team/group building exercises and interpersonal communications skills if the members have not been able to establish a reasonable amount of virtual trust and communications flow. Let us now at the different types of learning and to see if there are differences between face-to-face learning versus online learning. In particular, we will focus on what the student with a disability has to face in these learning environments and determine if there is any form of social justice in either one of these environments. One of these new types of social and business/organizational environments has been referred to as communities of practices.

According to von Wartburg, Rost and Teichert (2008), "virtual communities of practices (VCoPs) are communities of practices (CoPs) characterized by at least partially virtual interactions. CoPs are informal groups of people that share expertise and passion for actual practice within and on behalf of an organization. CoPs are said to be a more effective organizational form of knowledge creation than traditional and formal ways of structuring interaction" (p. 1) While Virtual communities of practice (VCoPs) may be seen as a relatively new organizational form, they are also perceived as a potential mechanism for creating knowledge both with and between companies (Kogut and Metiu, 2001; Von Krogh, Spaeth and Lakhani, 2003).

Virtual Teams have been a common segment of many companies, especially companies and organizations who have a global interest. Key advantages of virtual teams, as well as for Virtual Communities of Practices, are the mobility of the team by not being assigned to a physical location – but able to operate in any region of the world. Also, the geographical locations of various members of such groups or practice areas are not tied down to time zones, but rather many technological enhancements, such as the ability to pre-record meetings and presentations, and provide opportunities for virtual members to participate despite time, location, and other factors. With these items considered, virtual teams, communities, learners, and managers are learning and sharing best practices to help encourage, engage, motivate, and communicate in better ways with their human capital by implementing new strategies and processes with the use of social media to help with their performance/productivity in the workplace.

9. Conclusion/Findings of Social Media Applications

As more applications of social media continue to appear on the Internet, ranging from personal to business, the social aspects of this technological media continue to capture more attention and acceptance. While management may be interested in these many applications of social media, their main focus has been and probably will continue to be aimed at what quantitative measures can be achieved from this new strategic tool. Can it help to improve more brainstorming, engagement, and affect productivity (performance) rates? Furthers, this leads to yet a bigger question of how can business motivate and engage more employees into some form of e-participation to capture a newer type of skills, knowledge, and abilities? While social media is enjoying more attention of the population, in particular, the business community, it impact may not be fully realized at the current time. However, with the introduction, maintenance, and monitoring of social media in the workplace may need more longitudinal studies completed to fully appreciate its impact. Finally, we need to consider the current value of e-participation, along with the use of social media in a variety of environments? Finally, we need to consider whether or not social media should be constricted within contextual parameters of an organization's control or should it be more open in design so that employees may not feel controlled or monitored, but yet given an opportunity to engage with others and perhaps learn and share ideas more freely in a "informal think tank" environment, as well as a social framework for their part in a community of practice.

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Using Twitter for What? A Segmentation Study of Twitter Usage During Gezi Protests

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Abstract: This study reports results from a segmentation analysis of Twitter usage patterns during the Gezi Protests that took place in Turkey in 2013. This segmentation analysis reveals the existence of four distinct groups of Twitter users: 1) "update hubs", who use Twitter for learning about updates and sharing these updates with others; 2) "update seekers" who use Twitter to get information about the protests; 3) "opinion followers" who were oriented towards learning about opinions rather than information via Twitter; and 4) "voice makers" who used Twitter primarily to share their opinions about the protests. The Twitter usage segments were predictive of key differences in types of activities performed on Twitter during the protests, trust in Twitter as a source of information, and information verification techniques utilized by the users. First, while all segments were equally motivated to use Twitter for a surveillance function, *Update Hubs* and *Voice Makers* were also more likely to be motivated by using Twitter for connectivity (i.e., to expand one's network). Second, in terms of different types of Twitter related activities, *Voice Makers* and *Update Hubs* were more likely to Tweet and Retweet about the protests than members of other segments. Also, *Voice Makers* were more likely to reply to other people's Tweets. Third, the only segment that avoided using Twitter for informational purposes, *Opinion Seekers,* were less trusting of Twitter than other segments. Finally, *Update Hubs,* who aimed to act as a conduit by spreading information, were most active in terms of cross-checking information with multiple sources to verify the information they came across online before distributing it further.

Keywords: political crises, twitter, social media, uses and gratifications, segmentation

1. Introduction

The widespread adoption of social media applications that have emerged within the last two decades have led to an increased interest, among practitioners and academics alike, in how social media may transform the nature of communication during crises. Researchers have investigated a number of questions related to the use of social media for the coordination and organization of response efforts, how social media may enhance community resilience during emergencies and crises, and social media's potential as a source of information (e.g., Castells 2012; Latonero and Shklovski 2011; Starbird and Palen, 2010; Vieweg et al. 2010). To date, little attention has been paid to how social media users may exhibit different usage patterns during times of crises. Accordingly, this paper aims to fill this void by providing findings from an online survey which sought to examine how individuals utilized Twitter during the Gezi Protests in Turkey (2013).

While media freedom in Turkey has always been problematic, particularly since the 1990's, consolidation of the media has led to a significant decrease in availability of diverse news/information sources. Critics have also argued that since Ak Parti, the current ruling party came to power following the 2002 national elections, increased pressure on media have led to a decline in the availability of alternative voices (for a summary, see Çarkoğlu, Baruh and Yıldırım, 2013).

It is within this context of heightened homogenization of content in mainstream media in Turkey that the use of social media during the *Gezi Protests* became a key case study for understanding the role that social media may play in a political crisis. The protests started at the end of May (2013) when a relatively small sit-in protest against the removal of trees for the new redevelopment project in Taksim square area was violently evicted by police. Following this eviction, the protests quickly spread around Turkey and the agenda of the protestors quickly evolved to include not only the redevelopment project in Taksim, but also, issues such as the increased encroachment of the ruling party in the private lives of the citizens, threats to freedom of speech, freedom of assembly, and the freedom of the press. The supporters of the protest movement were highly vocal about the lack of and bias in coverage of the protests, resulting in an increase in social media, particularly Twitter use; Topsy Analytics reported about 10 million tweets containing hashtags related to the protests between 30 May – 4 June, 2013.

The remainder of this paper will continue with a brief overview of current research on functional approaches to studying media users and how this approach has been applied with respect to social media (generally) and the use of social media during emergencies. Following which, the paper will summarize findings from the survey conducted on respondents who used Twitter during the Gezi Protests. The findings will provide a summary of general Twitter usage patterns and will discuss the results from a segmentation study that investigates differences in Twitter use during the Gezi Protests.

2. Functions and the use of Twitter in crises

Since early days of communication studies, functional approaches to communication have claimed that the media serve different functions, such as surveillance (i.e., news and information), entertainment or mobilization for their users (Wright, 1960). For example, the Uses and Gratification Theory (UGT), which continues to be widely used within media research, holds that media users have an active, rather than passive relationship with the media (Newbold et al. 2002). As such, media users actively seek content or forms of media that will satisfy their needs (Grant 2010). Consequently, rather than examining the effect of the media on audiences, researchers employing the UGT framework examine what people do with the media.

In the last decade, the development and increased use of the Internet has led to a surge in the application of functional approaches such as the UGT to understanding users' choice and interaction with media, such as social networking websites on the web (Chen 2011). Examples include: how Facebook contributes to enhancing social capital (Ellison, Steinfield and Lampe 2007); why college students choose to use the social networking sites Facebook and Myspace (Raacke and Bonds-Raacke 2008); individuals' motivations for using Facebook (Joinson 2008) and, why people may choose not to use Facebook (Boyd 2008; Tüfekçi, 2008). Not restricted to understanding the use of social networking sites, some, such as Ku et al. (2013) sought to investigate why people choose to use other communication technologies over others. Others, such as Kaye and Johnson (2010) sought to understand why people accessed the web for political information, which enabled them to understand individuals' attitudes towards trust in government, feelings of efficacy, interest in politics, and the likelihood of voting.

With respect to Twitter, Chen (2011) conducted a study using UGT to understand how Twitter was perceived to satisfy the gratification need of connecting with others. The findings from this study indicate that the more time individuals spent on Twitter over a longer period of time (months), the more they fulfil their need for connectivity with others. Also, actively participating in a conversation was found to play a significant role in satisfying individuals' need for connectivity. More recently, Hughes et al. (2012) utilized UGT to investigate the differences between uses of Facebook and Twitter. Thus, those who use Twitter for gathering information do so for its "utilitarian value and cognitive stimulation" (p. 567).

While UGT has provided an insight into how and why people use applications on the Internet such as social media, scant attention has been paid to how and why individuals are choosing to use social media during different types of crises. For instance, Vieweg et al. (2010) analysed the use of micro-blogging (Twitter) during two types of crisis; a flood and grassfire. Their analysis of content helped them to understand how micro-blogs could be useful for gaining situational awareness during an emergency. Elsewhere, also emanating from this study, Starbird and Palen (2010) completed an analysis of the Tweets during these emergencies to understand how information is exchanged during an emergency. The study was particularly useful in recognising how crisis managers might direct their data management activities when interacting with social media in an emergency. Other studies have sought to reveal how different online applications can be used for operational activities, such as knowledge sharing in a crisis (Yates and Paquette 2011; Latonero and Shklovski 2011). Elsewhere Gupta a et al. (2013) examined the misuse of social media in a crisis, by examining the sharing of fake images. These and a range of other studies reveal important findings with regard to the value of social media and other types of ICT's in a crisis; however, they do not explicitly examine the user gratifications and motivations relating to the choices that users make during a crisis.

Among the few studies that investigate why individuals utilize social media during a crisis, particular attention has been paid to how social media is used for information seeking. For instance, a study by Austin et al. (2013) revealed college students motivations for using social media to seek reliable crisis information. Elsewhere, Taylor et al. (2012) conducted an online survey of individuals' use of social media following cyclone Yasi in 2011 in Australia and New Zealand. The survey revealed, to an extent, people's information needs during the

crisis and furthermore, the perceived value of social media as a form of psychological first aid which helped empower individuals in their search for reliable information. Also, recently, in their study of the use of social media during the Egypt revolution, Tüfekçi and Wilson (2012) examined the role that social media played in informing individuals of the protests, as well as enabling them to participate in the demonstrations. Crucially, the study also revealed patterns of participants' media usage and the impact of media use on participation in demonstrations.

Understanding how social media aids crisis management is certainly a valuable exercise, but it does not necessarily fully complement our understanding of how social media can be utilized by the public in a crisis, and therefore, what value and functions different forms of social media have for the public. Namely, whilst there are some studies that examine the use of social media sites for information seeking during crises, with the exception of the study Tüfekçi and Wilson (2012), there seems to be a lack of research that seeks to understand the publics' different usage patterns. Particularly, given the potential of social media applications to allow users to not only seek information but also produce and disseminate information, a more comprehensive understanding of social media's role during crises would require that we investigate a wider range of uses of social media. As such, our study seeks to understand the different patterns of social media usage in a political crisis, and how user motivations may influence behaviour. Furthermore, we examine the implications of user motivations in their use of social media in a crisis for the wider spectrum of crisis management.

3. Participants and procedure

The survey consisted of an online survey that was administered between 10 and 29 June 2013. Respondents (adults older than 18) were recruited using a snowball sample, through invitations sent via e-mail, blogs, Facebook, Twitter and LinkedIn. As such, the results of the survey are somewhat limited in terms of their generalizability.

Out of 890 respondents who started the survey, 230 completed it. On average, the survey lasted for 20 minutes. Respondents were predominantly female (64%). The reported mean age of the respondents was 28 (SD = 9.2). A majority of the respondents (54%) indicated that they were still students at a higher education institution (undergraduate or graduate). On average, the respondents reported using the Internet for about 4 hours per day for purposes other than school or work. More than half of them reported visiting news websites (69%), instant messaging (60%), visiting video sharing sites (58%), and using Facebook (77%) at least once a day. A considerably smaller percentage of respondents reported using the Internet at least once a day for writing blogs (13%).

4. Results

4.1 Twitter use during the Gezi protests

The majority of the respondents were Twitter users before the Gezi Park protests (85%). More than 90% of the respondents reported having visited Twitter to tweet or to read tweets about Gezi Protests. During the protests, on average, respondents spent approximately 2.5 hours per day on Twitter and logged into their accounts about eight times per day. Slightly more than half of the respondents (53%) used their smart phones to access Twitter during the protests, followed by the use of personal computers (37%) and tablets (10%).

In terms of uses and gratifications of Twitter in general, we measured four types of uses that have been examined in previous studies on social media (e.g., Ellison, Steinfield, & Lampe, 2007; Chen, 2011): using Twitter for surveillance function (e.g., "to be up to date about news", α=.86) (e.g., "to learn about daily lives of other people", α=.89), for relationship maintenance (e.g., "to stay connected with people I know", α=.91); for connectivity (e.g., "to expand my social circle", α=.87) and for self-expression function (e.g., "to make others understand me better", α=.87). Overall, respondents had significantly higher scores for using Twitter to fulfil surveillance needs (M = 4.09, SD = 0.77) than for self-expression needs (M = 3.11, SD = 1.19), relationship maintenance needs (M = 2.57, SD = 1.12), and for connectivity needs (M = 2.15, SD = 0.96) (all differences between surveillance function and other functions of Twitter were significant at p < .001).

Next, we used an open-ended question to ask respondents why they used Twitter during the protests. We used Grounded Theory approach for the analysis of these responses (Juliet and Strauss, 1990). Specifically, we

engaged in an open (substantive) coding of the responses to identify categories of reasons for using Twitter. Initially, we identified six categories of reasons: 1) to get information, 2) inadequacy of mass media, 3) sharing information, 4) to organize and provide assistance, 5) reliability of crowdsourced information, 6) feeling of comradery. Then, upon a second iteration, additional subcategories were created, resulting in a total of 10 categories, as follows: 1) Inadequacy of mass media was further divided into lack of adequate mass media coverage and bias in mass media coverage; 2) sharing information was divided into "helped me raise awareness" and "social media provided me with an opportunity to voice my concerns"; 3) needing information was further divided into "needing up to date information", "getting first hand witness information", and "gauging public opinion". Once the categories were finalized, two (student) coders independently coded each response for presence of a reference to these categories. In cases when the coders disagreed in their coding, the final code was assigned following a discussion between the two coders and the first author.

Respondents predominantly (57%) indicated that Twitter was useful for getting up to date information (Figure 1). In addition, 10% of respondents reported that via social media they were able to get first-hand information from peers who were actively participating in the protest. For example, one respondent indicated that "the only way to attain true information was to get it first hand from people" and at many times social media, despite issues regarding reliability of information, "were the only source of information." Relatedly, close to 40% of the respondents indicated that they did not trust the mainstream mass media because they found coverage inadequate (23%) or biased (16%). Figure 1 also depicts other key uses of social media. For example, in addition to getting up to date information about what was happening during the protests, social media was also used by respondents to learn about public opinion (gauge public opinion = 13%) and to actively share information (e.g., raise awareness = 15%) or opinions (11%).
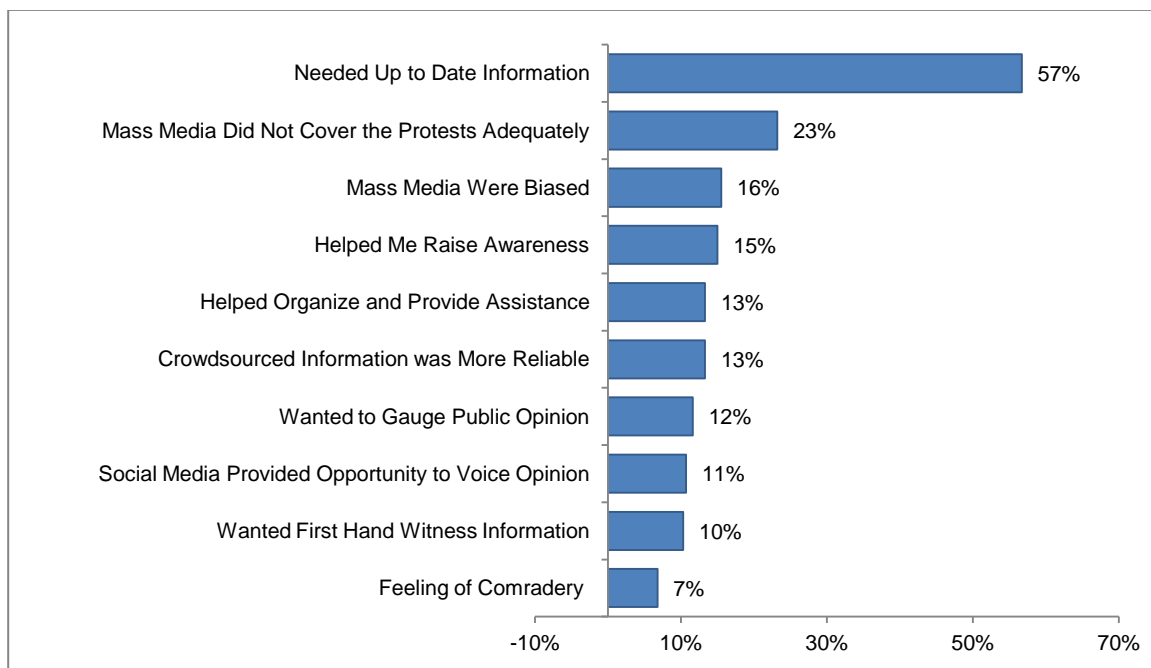
Figure 1: Reasons for using Twitter during the Gezi protests

Following this open question, using a five-point scale, respondents were asked to indicate the extent to which they engaged in on the following activities on Twitter (the scale ranged from "almost every time I log onto Twitter" to "never"): 1) "Tweet about the protests", 2) "Read tweets published by people whose Twitter accounts you follow", 3) "Read tweets published by users whose Twitter accounts you do not follow", 4) "Retweet others' tweets", 5) Reply to others' Tweets. As can be seen in Figure 2 (below), for those respondents who indicated participating in the activities at least half the time they logged on to Twitter, in line with the reasons of use reported above, respondents were more likely to use Twitter for information or opinion seeking (i.e., reading tweets) than for sharing purposes.
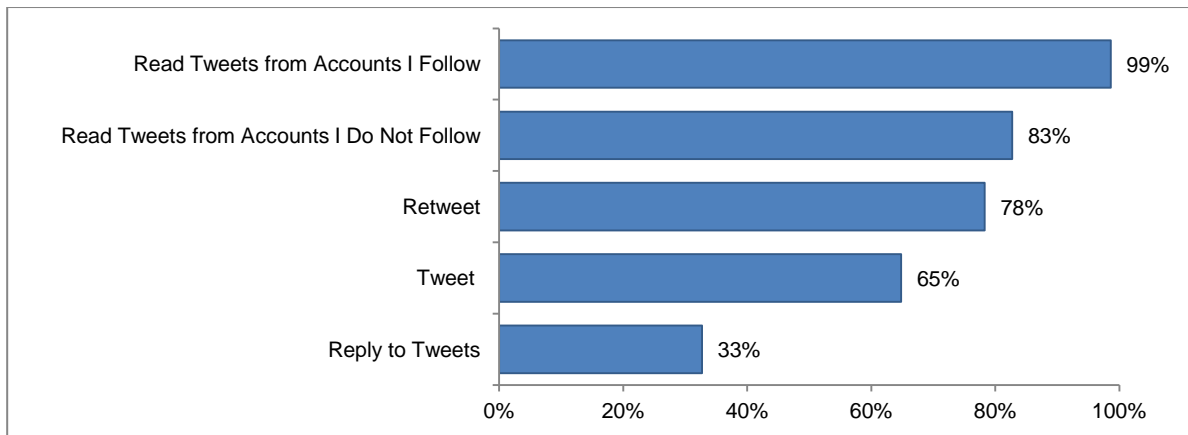
Figure 2: Activities performed on Twitter during Gezi protests

Given the reported lack of trust in the mass media as a factor that contributed to the use of Twitter during the protests, two important questions pertain to the level of trust that respondents had in users of Twitter as a source of information and how they verified the information they come across. Trust in Twitter was measured using three Likert scale questions with a five-point scale (e.g., "I trust the information I see on Twitter") (α = .78). The mean score for trust in Twitter was in the middle of the scale (M = 3.01, SD = .71), this may indicate that although participants used Twitter as a result of their lack of trust in the mass media, they were cognizant of the potential pitfalls of using Twitter as an information source.

We used an open ended question to investigate the ways in which respondents verified information they received from Twitter. Accordingly, the most frequently method of information verification was direct contact with "friends" who were in the protest zone (27%) (Figure 3).
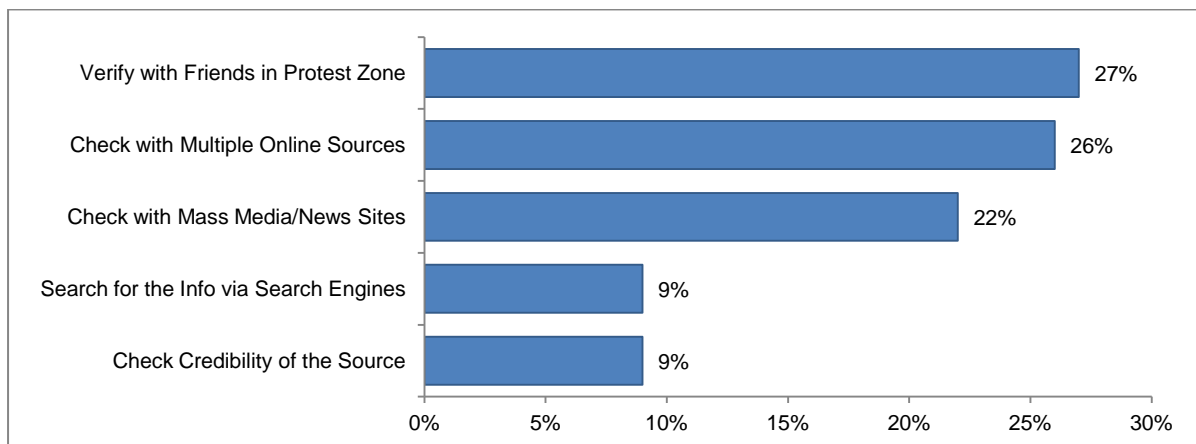
Figure 3: Top 5 information verification techniques

4.2 Gezi Protests and Comparison of Twitter Usage Segments

4.2.1 Description of Segments

For the segmentation analysis, respondents were asked to complete two questions (using a nine-point scale) to indicate the extent to which they would categorize their use of Twitter during Gezi Protests as oriented towards:

1) "voicing your opinions" (1) . . . (9) "share news/updates"
2) "sharing updates/opinions" (1) . . . (9) "following updates/news from others"

For both questions, approximately 30% of the respondents categorized themselves as being between the two opposites; respondents were more likely to categorize themselves as using Twitter to learn about opinions/updates from other people (45.6%) than sharing their own opinions about the protests (23%).

To segment the respondents in terms of Twitter utilization orientations, a two-step cluster analysis using the Schwarz's Bayesian information criterion (BIC) was performed on the responses to these two questions. The results of this cluster analysis revealed four segments of Twitter users (Figure 4). Internal criterion analyses using structure silhouette measure of cohesion and separation suggested a good fit.

1. *Update Seekers:* This segment comprised of users who overwhelmingly reported using Twitter for news/updates (73.5%) and for learning about what others have shared (100%) rather than sharing something themselves (0%). Update seekers consisted of 22% of the sample.
2. *Update Hubs:* Close to half of the respondents (45.1%) in this segment were oriented towards news/updates rather than opinions (10.8%). The majority of respondents in this segment (60%) reported maintaining a balance between sharing and learning about what others have shared. Overall, 47% of the respondents were in this segment.
3. *Opinion Seekers:* The majority of the respondents (79%) in this segment reported that for them Twitter was useful for learning about what others have shared. When they tweet, the members of this segment tweet about updates or news rather than opinions. Opinion seekers consisted of 19% of the sample.
4. *Voice Makers:* All members of this segment reported that they use Twitter for sharing, rather than learning about, what others have shared and that when they tweet they tweet about their own opinions. This segment was made up by 12% of responding, making it the smallest group.
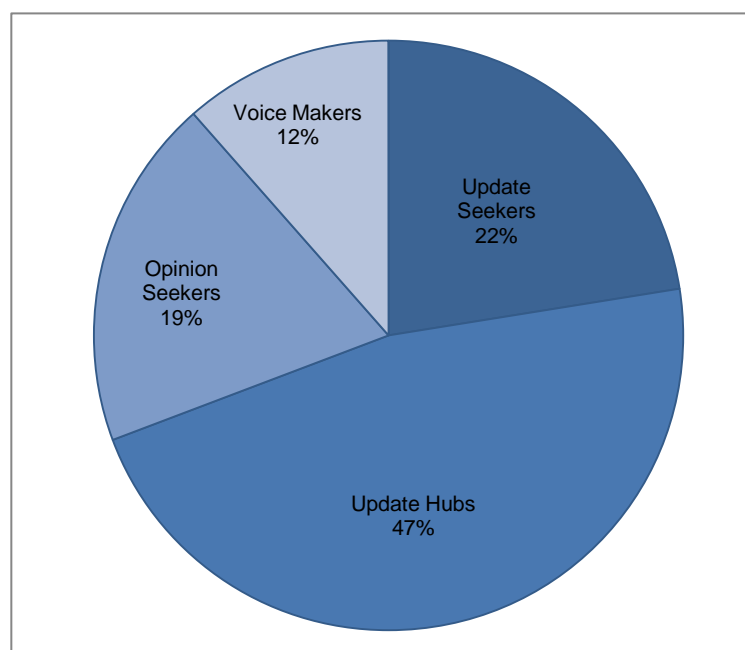
Figure 4: Twitter usage segments

4.2.2   Comparison of Segments

By comparing the usage segments in terms of the four uses and gratifications dimensions (discussed above) our findings revealed that there were no statistically significant differences between the segments in terms of using Twitter to fulfil surveillance (information seeking), self-expression, and relationship maintenance needs. On the other hand, the difference between the segments in terms of using Twitter to fulfil needs for connectivity approached significance. Namely, we observed that *voice makers* (*M* = 2.48, *SD* =.96) were more likely to use Twitter to expand their networks than *update hubs* (*M* = 2.19, *SD* = .96)*, update seekers* (*M* = 2.15, *SD* = .93)*,* and *opinion seekers* (*M* = 1.87, *SD* = .82) members of the other segments, F (3, 202) = 2.296, p = .079, η^2 =.033.

The following table, Table 1, summarizes the comparison of the segments in terms of participants engaging in five main categories of Twitter related activities. The percentages reported reflect the proportion of respondents who indicated that they participated in the activity in question at least half of the time that they log onto Twitter. Accordingly, there were no significant differences between the segments in terms of reading

tweets from accounts one follows and accounts one does not follow on Twitter. On the other hand, *Update Hubs* and *Voice Makers* tend to write Tweets (74% and 68% respectively) and retweet others' Tweets (86% and 80% respectively) more than the other segments. Results also show that close to half of the respondents in the *Voice Makers* segment reply to others' Tweets at least half of the times they log onto Twitter; this was in comparison to the 30% of respondents in the other segments replying to others' Tweets. However, this difference was not statistically significant which is possibly as a result of the small cell sizes in this group (there were only 25 respondents who belonged to this category).

Table 1. Comparison of usage segments in terms of activities on Twitter during the Gezi protests

	Update Seekers	Update Hubs	Opinion Seekers	Voice Makers	χ^2
Read Tweets from Accounts I Follow	98%	100%	95%	100%	5.444
Read Tweets from Accounts I Do Not Follow	90%	81%	81%	80%	2.241
Retweet Others' Tweets	69%	86%	69%	80%	8.112*
Write Tweets	50%	74%	59%	68%	8.836*
Reply to Others' Tweets	33%	30%	29%	48%	3.328

Notes. N = 217, *p < .05, **p < .01, *** p< .001 (2-tailed)

In terms of trusting Twitter as a source of information, with a moderate effect size, there was a significant difference between the four segments $F (3, 208) = 3.987$, $p < .01$, $\eta^2 =.055$. Post-hoc paired comparison tests with Bonferroni adjustment indicates that *Opinion Seekers* ($M = 2.6$, $SD = .69$) had significantly lower trust in information from Twitter than members of the other segments.

Table 2 summarizes the extent to which different segments utilized the most common three information verification techniques from the information verification methods discussed above. First, we observe that *Opinion Seekers* were least like to directly contact people from the protest zone to verify information (6.5%). Second, *Update Hubs* (34.6%) were more likely than other segments (with *Opinion Seekers* a close second) to crosscheck information with multiple sources.

Table 2. Comparison of usage segments in terms of information verification techniques

	Update Seekers	Update Hubs	Opinion Seekers	Voice Makers	χ^2
Verify with Friends in Protest Zone	34.2%	30,9%	6,5%	34,8%	8.765*
Check with Multiple Online Sources	21,1%	34,6%	29,0%	4,3%	9.162*
Check with Mass Media/News Sites	18,4%	14,8%	25,8%	30,4%	3.674

Notes. *p < .05, **p < .01, *** p< .001 (2-tailed)

5. Conclusion

The increased penetration of social media applications into individuals' daily lives may present important opportunities for crisis communications. One such opportunity concerns the incorporation of individuals into the communication mix, both as a consumer of information, and as a potential producer and disseminator of information. Given this potential, an improved understanding of how individuals use social media, may serve to influence the ways in which those actively pursuing social media as part of their crisis management strategy, might enhance their engagement with the public via these mediums. As such, the aim of this paper has been to provide a summary of how individuals utilized Twitter, a popular social media application, during a political crisis; the 2013 Gezi Protests in Turkey.

The findings from this study suggest that particularly in the case of this political crisis, mistrust in mainstream media, desire for access to direct information, and willingness to spread information and voice their opinions were the main factors that led to the increased reliance on Twitter (and potentially other social media sources). However, our findings also suggest that that this preference for using Twitter did not necessarily mean that users trusted social media as a source of information, consequently, as a result, they devised different methods for verifying information, such as finding more direct sources of information (such as through friends reporting from the sites of protest) and cross-checking information across multiple sources.

In addition to these findings about general usage patterns, the segmentation analysis performed on Twitter users underline the existence of four segments of Twitter users who differ from each other in terms of key

activities (and motivations for them), trust in Twitter, and information verification techniques. In terms of motivation, we observe that while all segments are equally motivated by "getting information", the *Update Hubs,* who value both getting and relaying the information (by Retweets and Tweets) are also motivated by expanding their own networks, which may explain why acting as a hub has a utility for them. Since members of this segment are acting as a hub that passes information onto others, they are also most likely to check multiple sources to verify the information they receive. Like *Update Hubs,* members of the *Voice Makers* segment also are highly likely to Tweet and Retweet but (possibly) since they are oriented towards sharing opinions rather than information they are much less likely than the other segments to crosscheck information with multiple sources. Also, almost half of the members of this segment comment about others' Tweets at least half of the times they go to Twitter. *Opinion Seekers* are characterized by considerably lower trust in Twitter. However, this does not necessarily churn their use but rather influences how they use it: namely, rather than using it for information, they use it to learn about the comments made by other users.

In this sense, our study supports the findings of others (e.g., Yates and Paquette 2011; Latonero and Shklovski 2011), where in times of crisis, one key use of social media is for information gathering. In addition, our study shows that crucially, users are also accessing social media as a means of giving them a voice. As such, via a simple segmentation scheme such as the one used in this study, users who can help disseminate information more efficiently during crises can be identified. In this respect, studies using techniques such as social network analysis can potentially benefit from this segmentation scheme in understanding the characteristics of central nodes and bridges. More generally, outside the context of emergency communications, the segmentation scheme may also prove useful in understanding the characteristics of influencers in social networks, with implications for a wide array of topics such as viral marketing strategy.

Relatedly, the findings from this study regarding the usage segments may also be key to furthering our understanding of social dynamics in online social networks. For example, recent research shows that at an individual level, online social network users are less likely to unfollow other users when they receive a reply or acknowledgement from them (Kwak, Moon and Lee 2012). Yet, the findings from this study underline the need to investigate the possibility that complementarity of roles (e.g., sharer, acknowledger, reader) factor into the sustainability of networks on Twitter (and other online social networks).

Finally, the findings from this study imply that functional approaches to understanding Twitter users' motivations and gratifications (e.g., Chen, 2011; Johnson and Yang, 2009) would benefit from further refinement based on usage types. Hence, going forward, further research into citizens' motivations for using social media, as well as their usage patterns in different types of crises will help to broaden our understanding of the ways in which citizens choose to utilize social media in a crisis and consequently, how their usage and engagement can be optimised to enhance crisis response efforts involving the public.

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Who Wants Police on Social Media?

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Abstract: More and more government functions and public organizations move online – and police forces are no exception. World-wide police forces are creating social media presences on popular services like Facebook and Twitter. The purposes range from improving relationships with the public to operational considerations such as the solicitation of information for solving crimes or the better handling of crises. In our current work we aim to better understand how police social media services (PSMS) should be designed to be effective. Crucial in this regard is the question of what impacts citizens' willingness to use and trust them. We conducted a survey with 859 citizens across four European countries: Czech Republic (n=306), Macedonia (n=209), Romania (n=109) and United Kingdom (n=235). Overall, willingness to use PSMS was positively associated with trust in police, but not related to perceived police performance. In contrast, trust in PSMS information was positively related with trust in police and higher perceived performance. We further found interesting group differences. Firstly, women tended to be more willing to use PSMS than men, although they did not differ in their overall trust towards police. Also, members of ethnic majorities showed higher willingness compared to minority members, although trust in information did not differ. Intriguingly also, members of the public tended to be more willing to use PSMS and also put higher trust in information, if they did not have direct experience with police. This trend was particularly visible for UK-citizens. Of all four countries UK-participants also demonstrated the lowest willingness to use PSMS and the second lowest trust in PSMS information after Macedonia. The highest values were found for citizens in the Czech Republic and Romania. Political orientation in contrast had no significant influence on willingness and trust in PSMS information nor did own social media use by citizens. The findings in our study provide first indicators of who may use or trust PSMS. The country-differences as well as systematic differences among citizen groups suggest that broad acceptance of PSMS may require closely targeted designs and multiple social media strategies across and within countries. Our study thus addresses some of the fundamental aspects of government agencies engaging with citizens in social media settings based on the example of police social media services. It deepens our understanding on issues around trust, technology acceptance and technology adaptation for citizen engagement, including a view on national differences. Our study further provides important additions to current theoretical frameworks on public acceptance of online services. Current frameworks concentrate primarily on the relationship between user and technology. Our observation that pre-existing attitudes of users towards the organization offering the services had an important impact for service acceptance introduces issues of organizational image and legitimacy as important factors in technology acceptance. We therefore argue that the relationship between user and organizations requires more serious consideration in models of technology acceptance and adoption.

Keywords: Social media, technology acceptance, police, European public, eGovernment

1. Introduction

As more and more citizens move online, police work of necessity needs to follow suit. In this police forces follow a general trend towards eGovernment into social media. Not being on social media is not an option for police forces – and this not only because of the proliferation of new forms of crimes such as financial fraud, identity theft, recruiting for terrorism or the grooming of children by pedophiles in online fora and games. Also service expectations of citizens are changing. The public increasingly expects faster reactions and the continuous availability of public services independent of physical location (e.g., Eriksson 2010; Lee and & Kwak 2012).

In our current research, we are interested in how police forces can and should integrate social media services into their work. In this study we investigated the attitudes of citizens towards police social media services (PSMS) in four European countries: Czech Republic, Macedonia, Romania and United Kingdom. Our investigation thus provides an international perspective on the acceptance of public services on social media considering the special case of police forces. The findings highlight group differences in acceptance as well as the importance of pre-existing attitudes towards the organizations providing online services for individual-level acceptance. These observations provide important theoretical as well as practical implications for acceptance of public services and technology more generally, in that they shed light on the crucial role of the relationship between users and the organization providing a technology or service, linking offline and online experiences and behaviors.

2. The role of social media for police forces

Policing is an information-led activity, i.e., without information that a crime occurred police cannot start investigations, without information about the incident and proof of guilt, perpetrators cannot be convicted, and without intelligence about potential threats, proactive protection of the public becomes impossible. The success of police work therefore relies on the support and participation of citizens. Social media can here provide important new channels for linking police forces with the public.

No wonder therefore that the extent of social media use by police forces has increased tremendously. Comparing, for instance, usage numbers for police forces in the USA, in 2013 95.5% of agencies used social media of which 92.1% had a Facebook page compared to 81.1% of agencies in 2010, when 66.8% had a Facebook account (IACP Center for Social Media 2010, 2013). As a recent review of the police social media practices in ten Europe countries identified (Denef et al 2012), social media serve a wide range of purposes including:

- as a source of criminal information

- to push information to the public

- to support police IT infrastructure

- to leverage the wisdom of the crowd

- to extent community policing in online environments

- to have a voice in social media

- to show the human side of policing

This list illustrates that for police social media possess at least two main functions: firstly, an operational function (e.g., gathering information from and pushing information to the public), secondly, a relational function to build and increase legitimacy in society (e.g., using online community policing and presenting the human side of policing). Especially for community outreach/public relations, general information dissemination and emergency/disaster notifications, social media are considered highly valuable for police work (IACP Center for Social Media 2013). However, the viability of these processes depends on the willingness of citizens to frequent these services and participate in these processes with police. The creation of services that citizens use and perceive as legitimate are thus a vital operational concern.

2.1 1.1 Factors influencing acceptance of online services

Acceptance of online services is strongly influenced by instrumental concerns such as usability (Nielson, 2000). As past studies of shopping platforms demonstrate, especially perceived usefulness of the service and the ease with which it can be used are positively related to acceptance (e.g., Chen, Gillenson & Sherrel 2002). Yet, instrumental aspects are not the only concern. As Hoefnagel and colleagues (2012) demonstrate for government services, the willingness to use public services delivered online is to large extent also influenced by affective components, such as social presence and the social influence of others. In addition, emotional aspects such as enjoyment or entertainment or the emotional appeal of a website have been shown to impact the willingness to use online services (e.g., Venkatesh & Agarwal 2006; Venkatesh, Thong & Xu 2012).

Interestingly, the discussions around customer acceptance and adoption of online services tend to ignore pre-existing attitudes of users to the organization offering the services (e.g. Sipior, Ward & Connolly 2011). Also, theories such as UTAUT and TAM and their derivatives (e.g., Davis, 1989; Venkatesh & Davis 2000; Venkatesh et al 2012) focus primarily on the relationship between user and technology, while ignoring the relationship between users and the organization providing the technology or service. This is problematic especially in the context of public organizations and government agencies such as police.

The police as social institution that protects law and order is tightly bound to public perceptions of legitimacy, as the willingness of a society to transfer the right to use force to its police officers rests on the belief that the police "will do the right thing" and a shared perception of its moral legitimacy (Sunshine & Tyler 2003; Tyler & Wakslak 2004). The acceptance of police social media services are thus closely linked to the existing relationships between police and the local and national environment. In this relationship trust plays an important role. The degree of trust in police impacts, whether citizens report crimes, support investigations,

defer to police decision or even comply with the law (e.g., Hough et al 2010; Tyler 2004). It is likely that this relationship not only holds for offline contexts, but also in the internet. We therefore hypothesize that trust in police increases the willingness to use PSMS as well as the trust in the information provided online.

H1: Trust in police is positively related to the willingness to use PSMS and to the trust in information provided on PSMS.

Related to the aspect of trust is the perceived performance of police forces, as performance is an important predictor of trust and legitimacy perceptions in the public (Gau 2013). To the extent that police is seen to be effective and just in their actions, the public is also willing to cooperate with police (Hough et al 2010; Tyler 2004). We therefore also hypothesize a link between perceived police performance and the willingness to use PSMS as well as individuals' trust in PSMS information.

H2: Perceived performance of police is positively related to the willingness to use PSMS and to the trust in information provided on PSMS.

Trust in police is not evenly distributed in society. Generally, in European countries women are more likely to trust police than men (e.g., Kääriäinen 2007), while ethnic minorities tend to express less trust in police than members of the ethnics majority in a country (e.g. Bradford 2011). Thus gender as well as majority or minority status in a society influence attitudes towards technologies (Ilie et al 2005; Jackson et al 2001; Ono & Zavodny 2008). So do the degree of internet usage and the reasons or purposes of internet use. Mesch (2012), for instance, found that disadvantaged groups had a stronger focus on work-related usage, while majority members had a stronger focus on maintaining social ties. We therefore predict that gender and majority/minority status also impact the willingness to use PSMS as well as the trust in the information provided on police social media services.

H3: Men and women differ in their willingness for PSMS use and their trust in PSMS information.

H4: Members of ethnic majority and minority groups differ in their willingness for PSMS use and their trust in PSMS information.

Trust relationships between police and public clearly differ also across countries (Kääriäinen 2007). This raises the question, whether offering PSMS finds equal acceptance across societies. In our study, we therefore also addressed the question of country differences in the acceptance of and trust in PSMS.

3. Methods

3.1 Design and sample

We conducted a survey with 859 citizens across four European countries: Czech Republic (n=306), Macedonia (n=209), Romania (n=109) and United Kingdom (n=235). The participants were randomly selected from the general population. The surveys were conducted by phone in the respective language of the country. In the full sample, 46.0% of the participants were male, 54% female. The age of participants ranged from 16 to 91 (m=51.99, sd=17.24). 88.2% stemmed from a country's ethnic majority, 10.6% from an ethnic minority (1.2% unknown).

3.2 Variables and scales

To capture acceptance of PSMS we assessed willingness to use PSMS as well as trust in the information provided by PSMS. Willingness to use PSMS was based on five items addressing disparate aspects of police social media use (e.g., willing to report a crime, contact police for advice or obtain information during crises; α = .73). Trust in police information on social media was measured by one item ("I would trust information my police force provides on their social media accounts").

Adapting items from the European Social Survey 2011 we further measured trust in the police (6 items, e.g., the police "provides the same quality of serve for everyone", "makes fair decisions when handling problems", α = .89) and perceived police performance (5 items, e.g., the police "is effective in preventing crime", "is effective in maintaining public order", α = 82).

As experience with the police can influence citizens' willingness to contact police and perceptions of police performance (e.g., Bradford, 2011) we also asked participants whether they had direct experience with their

local police force (yes, no). In our sample, slightly over half of the participants had direct experience with the police force(s) in their region (53.7%). We further asked for personal experience with social media ("Do you currently use social media such as Facebook or Twitter?"). In our sample, 39.8% of participants did use social media at the time of the study. As further control variable we included political orientation of the participants measured on a scale from 1: very left to 5: very right (m=2.96, sd=1.04). Table 1 provides the sample characteristics for the four countries with respect to demographics and control variables.

The original survey was developed in English. Translation and back-translation procedures were used to ensure the equivalence of item content in all four countries.

Table 1: Sample characteristics for the four countries

	Gender	Age	Majority/ minority status	Experience with police	Experience with social media	Political orientation (1:left, 5:right)
Czech Republic	35.6% male 64.4% female	m=58.33 sd=17.16	99.0% majority	52.3% no 47.7% yes	76.8% no 23.2% yes	m=2.93, sd=0.96
Macedonia	58.4% male 41.6% female	m=42.94 sd=14.60	80.4% majority	53.6% no 46.6% yes	46.9% no 53.1% yes	m=3.32, sd=1.09
Romania	40.4% male 59.6% female	m=48.35 sd=1.88	95.4% majority	60.6% no 39.4% yes	52.3% no 47.7% yes	m=3.06, sd=1.16
United Kingdom	51.1% male 48.9% female	m=53.98 sd=16.30	81.3% majority	31.5% no 68.5% yes	54.0% no 46.0% yes	m=2.63, sd=0.94

4. Findings

The general willingness to use PSMS and the trust in police social media services across all countries was at a moderate to high level (m$_{willingness}$=3.32, sd$_{willingness}$=.80; m$_{trust}$=3.47, sd$_{trust}$=.95). The willingness to use PSMS was positively related with trust in police, while perceived performance was unrelated to use police services (see Table 2). Trust in PSMS in contrast was positively related with both trust in police and perceived performance. These findings confirm hypothesis 1, but only partly hypothesis 2.

Table 2: Inter-correlations in the full sample

	mean	sd	1.	2.	3.	4.
1. Willingness to use PSMS	3.68	0.62				
2. Trust in PSMS (1 item)	3.47	0.95	.353**			
3. Trust in police	3.32	0.80	.166**	.392**		
4. Perceived performance	3.41	0.77	.094	.295**	.643**	
5. Political orientation	2.96	1.04	.048	-.025	.082*	.047

We further found interesting group differences. Firstly, citizens in the four countries differed significantly in their reported willingness to use and trust PSMS (F=15.31, p<.001). Willingness of Romanian and Czech citizens was significantly higher than willingness of Macedonian and UK-citizens, while Macedonian citizens were significantly less likely to trust PSMS information. As Figure 1 illustrates, of all four countries UK-participants demonstrated the lowest willingness to use PSMS and the second lowest trust in PSMS information after Macedonia. The highest values for both variables were found for citizens in Czech Republic and Romania.

Women tended to be more willing to use PSMS than men (t=-2.51, p<.05), although they did not differ in the trust towards PSMS information (t=-1.19, p=.24) or their overall trust in police (t=-1.42, p=.16), partly confirming hypothesis 3. Further, members of ethnic majorities reported a higher willingness for PSMS use compared to ethnic majority members (t=2.09, p<.05). Again trust in PSMS information did not differ (t=0.97, p=.33). Interestingly, members of the public were in tendency more willing to use PSMS and also put higher trust in the information, if they did not have direct experience with the police (t$_{willingness}$=1.66, p=.09; t$_{trust}$=1.80, p=.07). This trend was particularly visible for UK-citizens (see Figure 2). Political orientation in contrast had no significant influence on willingness and trust in PSMS information (see Table 2) nor did own social media use by citizens (t$_{willingness}$=0.33, p=.74; t$_{trust}$=0.41, p=.68).

A regression analysis on willingness to use PSMS across all countries with trust in police, perceived performance, majority/minority status and experience with police as explanatory factors confirms that trust in the police is the most important predictor of PSMS acceptance (see Table 3).
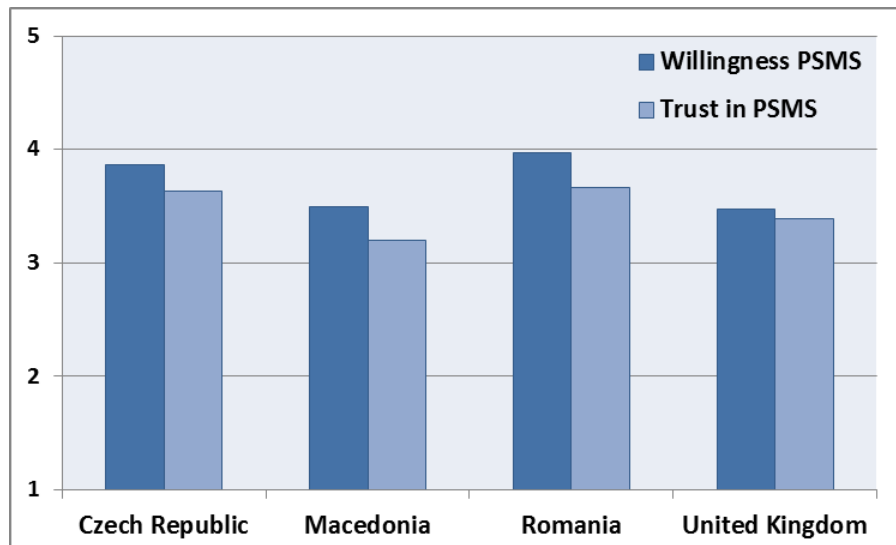
Figure 1: Country differences in willingness to use and trust in PSMS
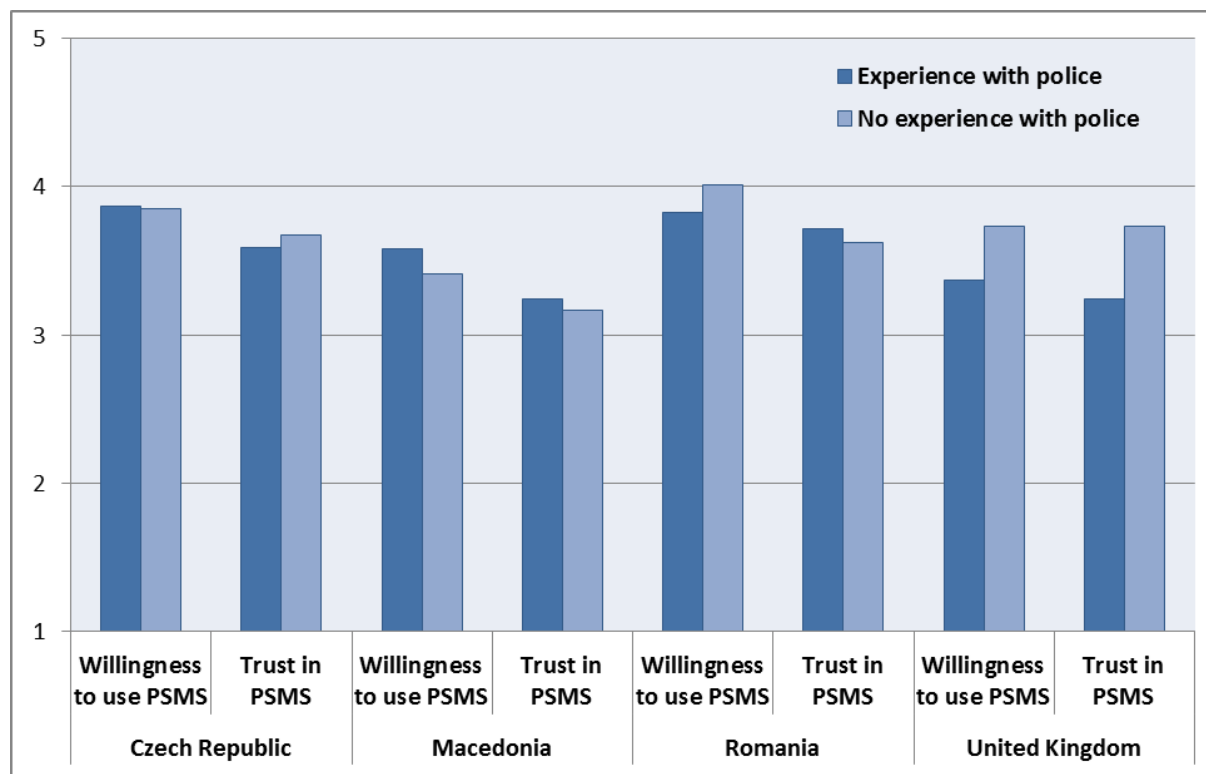
Figure 2: Country differences for citizens with and without police experience

5. Discussion

Social media have become an important tool to support police operations (cf. ICAP Centre for Social Media 2013). In addition, social media provide public and non-profit organizations with new ways for the engagement with communities (Lovejoy & Saxton 2012). Yet, police on social media can be a double-edged sword. While a police presence on social media may be perceived as reassuring by some, others voice fears about surveillance and intrusion into private spaces (e.g., Brown & Korff 2009). Police forces thus need to maintain a difficult balance – satisfying a public that wants to feel safe from crime as well as safe from government intrusion.

In the present study we tried to obtain a better understanding of the factors that impact the willingness to use police social media services as well as citizens' trust in these services. For this purpose we conducted a cross-national survey with citizens in four European countries. Our results demonstrate that the acceptance of PSMS is most strongly linked to trust in police. This suggest that the relationship between positive attitudes towards police and willingness to cooperate is not restricted to offline contexts (Hough et al 2010; Tyler 2004), but that the relationship holds also for the behavior of citizens online.

Table 3: Linear regression on willingness to use PSMS

Modell		Non-standardized coefficients		Standardized coefficients	T	Sig.
		Beta	Standard error	Beta		
1	(Constant)	3.261	.163		19.966	.000
	Trust in police	.145	.058	.185	2.485	.013
	Perceived performance	-.014	.058	-.017	-.232	.816
2	(Constant)	3.248	.174		18.660	.000
	Trust in police	.135	.058	.173	2.329	.020
	Perceived performance	-.002	.058	-.003	-.038	.970
	Experience w/ police	-.049	.070	-.039	-.699	.485
	Ethnical background	-.283	.119	-.132	-2.373	.018
	Gender	.111	.070	.089	1.586	.114

Note: R^2 = .03 for Step 1, diff R^2 = .03 for Step 2 (p < .05)

This is an important consideration as police forces often employ social media with the explicit aim to create trusting relationships with the public, and here specifically with groups that are harder to reach offline (e.g., youths or minorities). If trust in police affects willingness to use PSMS, pre-existing attitudes may bias individuals at least in their initial decision to start using PSMS. Especially in groups traditionally critical towards police such as minorities, initial acceptance may be low for this reason. This is also supported by our finding that members of ethnic minorities show a lower willingness to use PSMS than members of majorities. Our findings thus create a clear link between the image of police and the acceptance of online services.

Our finding that women are more willing than men to use PSMS fits into the general trend of offline observations that women tend to be more positive towards police (Bradford 2011; Kääriäinen 2007). A long held assumption is that women are less likely to adopt new technologies and internet services. This gap disappears in younger user groups (Czaja et al 2006), which are also the main adopters of social media. Still, women and men have different expectations and motivations for adopting technologies (e.g., Ilie et al 2005; Venkatesh & Agarwal 2006). These differences may not only influence, which social media platforms and which usages women and men are more likely to use, but are also a question of the design of platforms and services.

Willingness to use PSMS and the trust in PSMS information differed significantly across countries. One possibility to explain the differences in acceptance could be disparate levels of trust in the groups. Post-hoc analyses identified no disparities in the level of trust in police (F=1.34, p=.26), although disparate perceptions of police performance emerged (F=10.63, p<.001). Another possible explanation could be variations in national adoption rates of social media by the public and/or police. Interestingly, however, UK-citizens acceptance levels were the lowest among the four countries, even though social media use is arguable the most mature and wide-spread compared to the three remaining countries. This hints towards a complex relationship of cultural and national attitudes towards police and the online presence of police in particular. In practical terms these observations suggest national differences in the potential effectiveness for PSMS, in which mature or more saturated societies may be more critical towards police on social media than societies with less direct experience.

Overall, our results offer clear practical implications for police forces by providing indications of who may use and trust PSMS. Country-differences as well as systematic differences among citizen groups suggest that broad acceptance of PSMS may require closely targeted designs and multiple social media strategies across and within countries. Our study further provides important additions to current theoretical frameworks on public acceptance of online services. Whereas current considerations concentrate on the relation between user and

technology, our findings suggest that we need to broaden this view. Pre-existing relationship of users with the organization offering the services had an important impact for service acceptance. Questions of organizational image and legitimacy thus become important factors in technology acceptance. In consequence, we argue that the relationship between user and organizations requires more serious consideration in models of individual-level technology acceptance and adoption.

5.1 Limitations and further studies

While our study identifies the importance of trust in police for PSMS acceptance, the correlational design of our study does not allow drawing conclusions about the direction of the relationship between trust and acceptance. Still, the fact that we found no difference between individuals that use social media and those that do not suggests that trust may influence acceptance, and not the other way around. In the same regard, the quality of online services also impact customer perceptions of products and their intention to purchase them (Wells et al 2011). Trust, acceptance and usage of PSMS may thus in fact mutually reinforce each other. The exact nature of this relationship should be topic of subsequent investigations.

National variations in service expectations for websites and variations in design preferences are a well-documented fact (cf. Kappos & Rivard 2008). Yet, the majority of the currently prevalent social media services (e.g., Facebook, Twitter, WhatsApp, Pinterest, YouTube) are US-based and largely standardized in their design and functionalities. Police has thus the choice to either adopt existing platforms and work within their technological and social limitations or create own platforms or applications that are customized for the specific operational purpose as well as the cultural expectations of the society in which the police force operates. Given the 'stickiness' of users to familiar services (Manso & Manso 2013), the latter solution may not be as effective as using existing platforms. This raises the question, how police forces can adapt services within given infrastructures.

Our questions about PSMS were formulated on a rather generic level, i.e., we did not differentiate between the various platforms available to police forces and public. Not only the public, but also increasingly police forces use a variety of social media services, each with their own features and user demographics. Moreover, as reviews by IACP (2013) and Denef and colleagues (2012) illustrate, social media have a wide range of purposes and functions for police forces – from public participation in investigations to disaster notifications, and from relations building and public relations to intelligence gathering. Subsequent studies should thus clarify the disparate ways the public may react to these police activities on social media as well as the question, which services may be accepted for the various purposes.

Interesting in this respect is the observation that experience with police in tendency led to lower levels of PSMS acceptance. Given the importance of personal contact for trust development (Gau 2013), this seems a slightly counter-intuitive finding. At present our data does not allow to explain this difference between the two groups. While the observation is certainly intriguing, clearly further investigations are needed to better understand the underlying reasons.

Acknowledgements

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Exploring Non-experts' Preconceptions on the use of Crowdsourcing as an Innovative Tool

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Abstract: Crowdsourcing can be defined as taking a function traditionally performed by employees and outsourcing it to the crowd, in the form of an open call. Crowdsourcing as a type of open innovation process is challenging the idea of innovation in companies which is a closed, almost secret, process. The goal of this research is to explore preconceptions associated to crowdsourcing in companies. We wanted to understand how employees perceive the use of crowdsourcing in their company and whether these perceptions fit or not a reality based on professional and academic literature. In this exploratory research, we choose to study the opinion of non-experts in marketing, who have never used crowdsourcing, but are susceptible to manage a crowdsourcing campaign in a near future. We wanted for them to have a stake in this practice, but we expected that their inexperience would highlight preconceptions. In order to obtain a diversity of points of view, we interviewed ten non-experts from different companies in different industries. Globally and as expected, non-experts perceptions do not really match reality. They tend to underestimate the effort to manage the crowdsourcing process and they tend to express fears and reluctance to use it. More precisely, non-experts tend to neglect human aspects associated with crowdsourcing. For them, monetary reward is the main motivator for contributors; whereas studies emphasis fun as the key motivation. They agree that SMEs and start-ups are probably the best to benefit from crowdsourcing. They have trouble evaluating the added value of the work produced, but they expect to obtain a high quality work. They tend to over-evaluate problems and limits, which in return might slow down companies in launching a crowdsourcing project. By comparing perceptions to what we know of this phenomenon, this research should help marketers reflect on their own points of view on this topic, which in return might help them to be better prepared. Finally, by presenting preconceptions, this research also highlights the importance of managing this type of innovating process as a change process. It will enable companies to anticipate possible employee misconceptions and possible resistance.

Keywords: crowdsourcing, preconceptions, innovation, change management, non-experts, employees

1. Introduction

"Consumer goods companies that employ crowdsourcing in marketing campaigns or new product development will boost their revenues by 1% compared to "noncrowdsourced competitors" by 2015. So crowdsourcing does bring companies a competitive edge" (Petavy, 2013). Crowdsourcing will enable major organizational changes by challenging the idea of innovation in companies which is a closed, almost secret, process. This type of change is not always well perceived and understood by employees and can lead to resistance to change (e.g. Alasadi and Askary, 2014; Cullen et al., 2013) or not-invented-here syndrome (e.g. Burcharth et al., 2014; Schaanschmidt and Kilian, 2013). The goal of this research is to explore preconceptions associated to crowdsourcing in companies. We wanted to understand how employees perceive the use of crowdsourcing in their company and whether these perceptions match or not a reality based on professional and academic literature. After rapidly defining the term crowdsourcing, we will present an image of crowdsourcing built upon scientific and practitioner documents. Then, methodological issues will be presented; followed by the results of this research.

2. Definition

While Howe's definition (2008) is probably the most cited definition about crowdsourcing, we will use Estellés-Arolas and González-Ladrón-de-Guevara's definition (2012) in this paper. To come up with their definition, they analysed 209 documents, found 40 original definitions, and integrated the most important ones. For them, "crowdsourcing is a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage that what the user has brought to the venture, whose form will

depend on the type of activity undertaken." We think, like Brabham (2013), that, even if it is a wordy definition, it is a complete one. Its only drawback, in our opinion, is to remove the focus from innovation and collaborative web2.0 applications.

3. Crowdsourcing in organizations: 4 axes

Even if crowdsourcing is still a new domain of interest for researchers, literature on this domain is growing. The goal of this paper was not to do an in-depth classification of this literature, but we needed to organize our readings (around 150 documents) in order to have a baseline to compare respondents' perceptions. First, we used articles presenting some synthesis (e.g. Marjchrzak and Malhotra, 2013; Saxton et al., 2013; Dawson, 2012; Burger-Helmchen and Pénin, 2011; Sloane, 2011; Bartolini and Vukovic, 2010; Geerts, 2009; Brabham, 2008). Then from crowdsourcing literature, we looked for the most frequent topics. We excluded technical papers related to the development of a specific platform (e.g. Naparat and Finnegan, 2013) or to a specific environment (e.g. Vivacqua and Borges, 2012). Once organized, we obtained 4 categories/axes (human aspects/Economical aspects/Quality/Problems-limits), which are interdependent. The human aspect is central (Ischikia and Lescop, 2011) and impacts the other axes. These axes will structure the image of crowdsourcing in organizations based on literature. Table 1 presents each axis with its main topics, and some references about the topic. The next sections will detail each axis.

Table 1: Most frequent topics with examples of references

Axis	Topic	Examples of references
Human aspects	Types/kind of contributors	Bonnemaizon et al., 2012; Brabham, 2012 ;
	Contributors' motivations	Thuan et al., 2013; Frey et al. 2011 ;Rogstaduis et al., 2011; Brabman, 2010;
Economical aspects	Value/benefits of crowdsourcing	Füller et al., 2014; Poetz and Scheier, 2012; Lebraty and Lobre, 2010; Schenk and Guittard, 2009; Chesbourg, 2003;
	Costs of crowdsourcing	Cere, 2013; O'Neil, 2010; Miziolek (2011);
	Contributors 'payment'	Zhao et al., 2013; Horton and Chilton, 2010; Kleemann et al., 2008;
	Success and Failures	IdeaConnection, 2013; Simula, 2013; Gardner, 2011;
Quality	Quality of the work obtained	Poetz and Schreider, 2012; Saengkhattiya et al., 2012; Kazai, 2011; Zaidan and Callison-Burch, 2011;
	Speed in production of the work	
Problems-limits	Constraints/limits/challenges	Simula, 2013; Clough et al., 2013; Aitamurto et al., 2011; Bayus, 2010; Lebraty, 2009;
	Internal conflicts	SchaarsSchimdt and Killian, 2013; Mäkinen, 2012; Brahbam, 2008;
	Legal issues	Peng, 2011; Rosen, 2011; Wolfson and Lease, 2011;

3.1 Human aspect

This main axis interacts significantly with the other. Without this awareness, it would be very difficult for a company to conduct a campaign of crowdsourcing. Human dimension helps identify the quality of the work, adapt the project according to the economic objectives of the company, and mitigate risks. A key feature of crowdsourcing is the large number of participants involved in order to produce a lot of ideas. "However, large numbers of ideas are not necessarily beneficial to firms, and might in some cases constitute a major burden" (Aitamurto et al., 2011). The varieties of types of contributors (with different degrees of amateurism or professionalism) are presented and discussed in papers on this axis. The crowd is not a uniform block of dabblers. Brabham (2012) even used the expression the "myth of Amateur Crowds". We can remark that employees are rarely described and not studied as contributors. We did not find a paper seeking the point of view of employees on crowdsourcing. Another aspect of this axis often discussed is the contributors' motivations. Frey et al (2011) present two types motivations: Intrinsic motivations (interest and fun) and

extrinsic motivations generally related to financial support. For Thuan et al. (2013), contributors seek more than just compensation. Their motivations are not only governed by greed.

3.2 Economical aspect

The business dimension of crowdsourcing is actually a kind of reform of the open source philosophy, but for capitalist purposes claimed Brahbam (2008). Crowdsourcing can be applied to start-ups as well as large businesses; however goals and objectives are not the same. Large companies tend to use the crowdsourcing in addition to their innovation strategy, while recognizing that it is also a way to give a dynamic image to the brand and be better known. Small businesses and start-ups have a real need for innovation and count on this practice to meet their innovation challenges. Regarding costs, Miziolek (2011) indicates that an organization will reduce its external costs, but the internal costs related to the practice can sometimes be very high. Chesbourgh (2003) presents examples of the added value that can generate the crowd, as well as various economic benefits that a company can enjoy. The payment of contributors is a topic also often discussed (payment or no payment? If payment, how much?). Authors have a consensus only to say it is important to manage this issue carefully.

3.3 Quality of the work produced

The crowd is capable of the best and the worst. Quality issues emerge and are often associated with the quantity. Often, to minimize quality issues, researchers emphasize the speed in the production of the work. The level of quality will "be the result of the ability of the company to filter the amount of responses" (Lebraty, 2009). Getting the expected quality can require a lot of work.

3.4 Problems and limits

Aitamaturo et al. (2011) list situations where crowdsourcing is not at all recommended. Simula (2013) explains limits and challenges faced by crowdsourcing initiatives: making the crowd aware of an initiative, getting the crowd to contribute, getting the crowd to stay on board, avoiding organizational resistance and pranks, putting the blame on the crowd in case of problems, exploiting labor, the relatively lack of diversity of the internet users (white, educated…), legal issues, and the quality of ideas. Regarding legal issues, intellectual property is often cited as one of the main obstacles to the practice of crowdsourcing; there is still no law to regulate this practice. Individual contributions during the screening stage should be carefully analyzed to see that copyrights are not violated (e.g. presence of a trademark in a video, use of protected sound work...).

Globally, we built using literature an image of crowdsourcing stressing its limits. It has to be carefully managed on a lot of dimensions (human, costs, legal…) in order for companies to be able to gain the benefits expected (especially in terms of quality of work produced). Organizations and stakeholders have to be aware of these dimensions and trained; otherwise they might be on the road to a hard awakening.

4. Methodology

In this exploratory research, we choose to study the opinion of non-experts in marketing, who have never used crowdsourcing, but are susceptible to manage a crowdsourcing campaign in a near future. Our research question fits the definition of a qualitative study as defined by Creswell (1994): "an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants and conducted in a natural setting". We followed classical steps associated with qualitative research (creation of an interview guide, selection of respondents, interviews, coding, and analysis). In this section, we will only present some methodological issues associated with the research.

4.1 Respondents and their selection

We wanted non-experts with a stake in this practice. With these constraints (inexperience and stake), it was therefore difficult to clearly identify a pool of contacts meeting these criteria. In order to maximize our chances, we used different communication channels like social and specialized networks. In addition, some contacts recommended other contacts. At the end, ten persons accepted to participate in our research, which represented a diversity of points of view (six men and 4 women). They work in six different companies (2 big, 2

medium, and 2 small), two governmental agencies, and one association, and in various sectors (whole sale retail, telecom, electronic, film production, chemistry, consulting).

4.2 Data collection

We used the work done during the literature review to build an interview guide. This guide was constructed with one main open-ended question (what does crowdsourcing mean for your organization and for you?). The objective of this question was to let the respondent present his/her views without guidance from the researchers. Depending, the information given, we also asked follow-up questions linked to each axis presented previously. In order to validate the data collection process and the representation built from the literature, we interviewed an expert in crowdsourcing, who currently works for a major crowdsourcing platform.

5. Results

Globally, respondents are not unanimous about what they call crowdsourcing. They know Howe's definition and they tend to refer to it. They are waiting to try this practice, even if they do not really know what they will do (what type of initiative). They are in a situation of uncertainty. Nevertheless, when they imagine what they might do, they cite the three broad areas of the use of crowdsourcing in marketing (product development, advertising and promotion, and marketing research) found in Whitla (2009). The other results will be summarized using the axes extracted from the literature.

5.1 Human aspect

The practice of crowdsourcing requires attaching great importance to human aspects. Non-experts do not have this awareness. For the majority of them (7 out of 10), even when we ask them directly if they think they will need to take into account human issues, they minimize its importance. It does not seem to matter for them beyond opening the initiative to all. In the case of contributors, the respondents really see them as a crowd, a group not really defined but composed of amateurs. They do not see their interlocutors as specialists, which is an oversimplification compared to the literature. For all of them, the motivations for contributors are principally financial and not at all related to fun or to intellectual stimulation. They never discuss crowdsourcing as an activity that could impact their company's employees (except mentioning possible lay-offs). For this axis, non-experts' perceptions are far from reality.

5.2 Economical aspect

They see crowdsourcing as potentially beneficial for their organization. For them, crowdsourcing is a good way to get a lot of ideas quickly, at a lower cost, and without a lot of efforts. They are not very clear in regard to costs, except the cost of creating the call to the crowd. For them, it is clearly not a costly activity even if they use a third party. Compared to reality, they minimize the work to be done (e.g. filter best contributors and best contributions) and the costs associated. They are not really clear about the contributors' remuneration. Some of them even indicate that they will not know how to assess the value of the reward (if they need one). Like the literature, they think that crowdsourcing is not for all sectors of activity. For them, SMEs/start-ups are more likely to use such practice. For this axis, non-experts' perceptions are closer to the reality, even if their perceptions are a bit idealistic or at least superficial, which could be a reflection of their inexperience.

5.3 Quality of the work produced

They are all confident in the quality of contributions from crowdsourcing. While they believe strongly in this quality, they express doubts in their ability to assess the worth of the work produced. They (9 out 10) do not believe that the rate of failure of crowdsourcing projects might be relatively high. They do not think that the quantity of answers can reduce the overall quality of the work produced. For this axis, non-experts' perceptions are a bit overoptimistic, even if they also express self-doubts.

5.4 Problems and limits

In general, they do not give a lot of information about this axis without a direct question. For all of them, crowdsourcing may harm the image of an organization, but it should be used in their organization. The majority indicates that the whole strategy of innovation in their firm should rest essentially on crowdsourcing. Considering that they do not know what they will really do, they do not seem to be worried by their situation

(suited or not suited for crowdsourcing). They have heard about certain companies malpractices and they seem aware that crowdsourcing might cause lay-offs, but they did not want to elaborate on it. The importance of legal issues is the item where we were able to see the widest diversity of opinions. For some, it seemed not important, for others very important. When we tried to go deeper into this topic, they distanced themselves from the problem: "These are lawyers' issues, not mine". While they were rejecting the discussion on legal issues, they opened the door to the discussion on some of their uncertainties/fears. They were looking forward to trying, but they were not really sure what they would do. They did not feel really ready and were a bit worried it might go wrong. For this axis, non-experts' perceptions are not clear. We do not know what they really thought, because they often rerouted the discussion. At least, they seem aware of their own limits and some even expressed some doubts on their knowledge and ability.

Table 2 summarizes the main elements from the comparison between the two images of the crowdsourcing created in this paper (literature vs. non-experts). Even if these perceptions overlapped, the gap is quite big.

Table 2: comparison perception from literature vs. non-experts' perceptions

Axis	Literature	Non-experts
Human aspects	Axis central. Awareness needed. Variety of types of contributors who seek more than just compensation	Axis not really important. Contributors are seen as a group of amateurs not well defined. Their motivators are financial
Economical aspects	Crowdsourcing can be costly, but can be highly beneficial for an organization. Not for all sectors of activity.	Potentially beneficial for their organization. Not a very costly activity. Not for all sectors of activity
Quality	Quality is not always there and it might require lots of effort to get it. Quantity can impact quality	Quality will be there. Quantity is not an issue.
Problems - limits	Crowdsourcing can be the source of many problems. The project team must take them into account and manage the risks associated (ethical, legal…)	May harm the image of the organization, but they are not really worried about it. Do not want to discuss this axis. Somewhat aware of their own limits

Globally, because of their stake in this process, we were expecting a better knowledge and not as many misconceptions from the respondents. We can see on one side (what they would like the reality to be), non-experts seem to have a slightly utopian perception of crowdsourcing, probably built upon examples of successful crowdsourcing initiatives and on technological utopianism (Kling, 1996). On the other side (what they think the reality might be), they show uncertainties and sometimes express some fears. These two sides of non-experts perceptions are not grounded in reality (the expert showed not too high expectations/no expression of fear). Dubouloy (2005) indicates that this type of gap between perceptions if not taken into account by organizations can be the root to resistance to change.

6. Conclusion:

Professional and scientific articles coupled with the feedback from an expert in the field of crowdsourcing were used to create an image about the reality of the practice of crowdsourcing in organizations. Then ten non-experts, with a stake in this practice, were interviewed. It allowed examining whether these opinions were in line with the work of researchers and showed some non-experts misconceptions. Indeed, even if the human axis is at the center of each of the other areas studied (economical, quality, limits), non-experts tend to overlook this important aspect. The economic aspect of crowdsourcing is relatively well understood by non-experts. It is not this axis that could compromise a crowdsourcing project. Most respondents were able to put forward the same arguments and ideas found in literature. Quality from crowdsourcing projects is somewhat misperceived. The ability of the company to sort out the results in order to bring up the quality is in question. This quality is closely linked to the management of the human aspect of internal (employee) or external (contributors). As for limits/problems associated to crowdsourcing, they remain overlooked or at least pushed aside by non-experts. This could hamper businesses daring to start a process of crowdsourcing.

As we have seen non-experts' perceptions tend to fluctuate from over-optimistic to relatively pessimistic, creating high expectations, fears, and misconceptions. By comparing perceptions to what we know of this phenomenon, this research should help marketers reflect on their own points of view on this topic, which in return might help them to be better prepared. Finally, by presenting preconceptions, this research also highlights the importance of managing this type of innovating process as a change process. It will enable companies to anticipate possible employee misconceptions and possible resistance.

Acknowledgement

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How the Social Media Contributes to the Recruitment Process?

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Abstract: Nowadays the Web represents a significant component of the recruitment and job search process as many Websites and social platforms allow recruiters to seek candidates for a specific job position while, on the other side, they enable candidates to find the job they are looking for. In such a scenario, one may wonder whether social media can support companies in recruiting good job candidates. This actually represents a challenging issue at both academic and industrial level. Indeed, social recruitment sites provide a huge mass of unstructured or semi-structured heterogeneous data, which requires statistical and information extraction techniques to turn unstructured data into structured information suitable for being analysed. In this paper we analyse the job demand trends on the Web by exploiting a significant sample of job vacancies concerning the Italian labour market domain. Our work is aimed at improving the recruitment process by allowing the matching between job demand and supply. In particular, we investigate two research questions. First, how we can statistically analyse unstructured data retrieved from the Web? Second, what contribution can unstructured data give to the knowledge of a phenomenon that has been traditionally studied using statistics or analyzing administrative data?. In addressing the questions we defined a methodology to extract and manage information from unstructured texts (i.e. job vacancy descriptions on the Web) and to turn the descriptions into data useful to perform quantitative and qualitative analysis. One of the most valuable results of this research is the identification of the most required skill levels and professional competencies in the job vacancies. In fact, the skills represent the added value that Web data may provide to the knowledge discovery process in the Italian labour market domain. Their identification inside the recruitment Website contents may solve the qualitative skill mismatch issue and improve the job-matching activity supported by social media.

Keywords: Social recruitment, Social Media, Business Intelligence, Unstructured data, Statistical models

1. Introduction

This paper gives a contribution in the context of e-recruitment supported by social media, namely the Social Recruitment. In particular, it focuses on the problem whether social media can support companies in recruiting good job candidates. Therefore, we analysed the job demand trends on the Web by exploiting a significant set of job vacancies concerning the Italian labour market domain. Infact, Web intermediated job vacancies are a not negligible subset of the overall job demands. The study focuses on analysing the employment demand as advertised by companies on the Web through the main search engines and recruitment Websites operating in Italy. This is an ongoing research that, at this experimental stage, has taken into consideration more than 170 thousand job vacancy ads in the period between February and April 2013. We extracted the descriptive contents of job vacancies by means of text-analysis techniques as well as statistical methods to assess their significance, specificity and both the quantitative and qualitative values.

Our work is aimed at investigating two main research questions. First, how we can statistically analyse unstructured data retrieved from the Web? Second, what contribution can unstructured data give to the knowledge of a phenomenon that has been traditionally studied using statistics or analyzing administrative data?

To answer the questions, a methodology has been defined for processing information extracted from unstructured texts, such as the job vacancy ads published by companies on the Web, in order to obtain data of both quantitative and qualitative nature for statistical analyses. We then expanded our analysis by comparing these statistical indicators with the administrative data collected by the public administrations about the same context, focusing in particular on the added value of qualitative data. These data are used to identify the skills required by the market in the descriptions of job vacancies. This identification allows one to create a dictionary of skills that may constitute a valuable source of information for several stakeholders of the recruitment process.

The paper is structured as follows: in Section 2 a short description of the evolution of recruitment online is provided; Section 3 describes the methodology to extract and classify the job vacancy ads; Section 4 presents the contribution of Web qualitative data for the skill identification; in Section 5 a brief survey of related works is provided; finally some concluding remarks and the future works are outlined in Section 6.

2. E-recruitment and Social Recruitment

The intermediation between demand and supply was liberalized in Italy at the end of the '90s and was then extended by an Italian Law in 2003. The latter particularly focused on the identification of all possible job-matching channels, by recognizing and regulating the activity of subjects carrying out intermediation outside the state managed system. The channels through which job seekers find employment opportunities have significantly changed over the past 10 years and some have been created anew.

The Web is increasingly used by employers and job seekers to advertise demand and supply, by exploiting the vast variety and enormous potentials of its communication channels. IT technologies have then made possible the creation and diffusion of new channels, such as e-recruitment (Lang 2011), i.e. the candidate selection and recruitment process implemented through the Internet services. The e-recruitment started with simple job posting Websites where recruiters can post jobs with their contact information and wait for the candidates to find these postings and apply. This first kind of recruiting Websites is known as Job Boards and it includes Websites such as Monster and Career Builder. The second kind of online recruitment tools are the job aggregators. Job aggregators are Websites, such as Jobrapido and Indeed, collecting jobs posted at several job boards and let job seeking candidates apply.

Thanks to the development of Web 2.0 technologies (or social media), such a process subsequently evolved into Social Recruitment (Lee 2005), a new way of matching employment demand and supply on the Web. It is characterized by the use of social media facilitating the establishment of relations and the activation of efficient communication flows. Social recruitment is relatively a new idea and various companies develop applications that integrate several social networking sites such as LinkedIn, Facebook and Twitter, and lets recruiters reach a higher number of both active and passive job seeking candidates.

According to recent investigations on employment intermediation channels (Jobvite 2013), besides word of mouth, the Web is the most effective instrument to carry out a targeted research based on specific requirements and, in particular using job search engines. After this type of Websites, the social media soon arrived, in particular the social networks, which have further changed the way in which jobs are sought. They expand the collaboration between employers and job seekers and increase the number of channels providing information. It should be underlined that the social media do not completely replace the traditional methods used by recruiters and job seekers, but they become one of their best allies. Infact, 88% of Italian recruiters declare to rely on an Internet channel to find information on candidates, and 42% of these mainly use LinkedIn (Jobvite 2013), regarded by recruiters as the most useful social media, together with the specialist search engines, where demand and supply can be matched.

2.1 Recruitment process

To better contextualize our work, we now give an overview of a typical recruitment process. The process starts when a company decides to hire employees. The company creates a job profile that specifies the role, job category, essential skills, location of the opening and a brief job description detailing the nature of the work. It might also specify the total work experience that the candidate employee should possess, along with the desired experience level for each skill. The job openings are advertised through multiple channels like online job portals, newspaper advertisements, etc. Candidates who are interested in applying for the job opening upload their profile through a designated Website. The Website typically provides an online form where the candidate enters details about her application like personal information, education and experience details, skills, etc. The candidates can also upload their resumes through the Website. The objective of allowing the candidate to enter data in an online form is to capture the information in a more structured format to facilitate automated analysis. However, real life experience suggests that most candidates do not specify a lot of information in the online forms (Singh 2010). Currently, this process has undergone some minor changes due to the advent of social media. Social Recruitment process is characterized by user professional profiles published on social networks with a broad space dedicated to skills and professional background and mainly to the user contact networks (Reiners 2013). Recruiters typically use these, not to gain new information (which they obtain primarily from the candidate's resume) but to validate those resumes and learn about the applicants' network. Moreover, many companies use social media to advertise job openings, in order to have a broader choice of channels.

The recruitment process should be aimed at supporting the matching between job demand and supply, and the skills descriptions are the main detectable information in both the sides that could facilitate this goal. Indeed, skills and competences are information nearly always present inside the job vacancies and the candidate' resumes. The issue is how to retrieve and manage them to improve the matching between recruiters' needs and job seekers' desires. Certainly, this is a challenging issue researched at both academic and industrial level. Our work would like to give a contribution in this direction, by focusing on a skills retrieving method to lay the foundations of a recruitment process. To do this, it is particularly important to identify the skills inside the Website contents, mainly in resumes and job ads published on social media.

While it is true that is increasingly easy to find corporate Websites on the Internet, it is a strong challenge to understand whether there are any job offers matching the job seekers' profiles. Some job aggregators allow one to find vacant positions on the Web, and therefore can be used by selectors to recruit candidates. However, despite being information-rich tools, the information in the recruitment Websites is not easy to process in order to analyze the trend of demand and supply and the contents of the ads, without suitable technologies and methods to process unstructured data. Therefore, information extraction techniques are needed to address this kind of limitations (McCallum 2005).

2.2 Unstructured Web data

The large quantity of information available on recruitment Websites calls for an *a priori* selection of the sources and criteria for information extraction. The processing of social networks to retrieve information on employment is even more difficult, since they are characterized by unstructured texts and a high level of freedom in the use of words and contents. To identify the set of ads for our experiment, a number of specialist job intermediation Websites and job search engines were selected. The Websites considered might be able to be representative from a statistical point of view of the trend of Italian demand on the Web. Therefore, an analysis of the sources is repeated over time in order to maintain updated significance.

The specialist job intermediation Websites, including social media, are characterized by highly heterogeneous contents and a low level of text structuring. A set of IT tools and methods need to be identified to process unstructured data for the twofold purpose of retrieving from such Websites the skill descriptions and the statistical indicators on the demand trends. The literature provides several methodologies for the processing of data extracted from the Web, and in particular from social media (Dalal 2013; Feldman 2007). However, there are still few methodologies applicable to the labour market setting, in particular capable of extracting both qualitative and quantitative data. The latter is the goal of the methodology we present in next section.

3. Methodology to Extract and Classify Web Data

As explained in the previous section, this work has analyzed over 170 thousand job vacancy ads published between February and April 2013. The reference sources and Websites have been selected with the aim of fully understanding the heterogeneous nature of the online recruitment process. Therefore, some very different groups of sources have been investigated: the Websites of the main national daily newspapers, job boards and aggregators matching demand and supply, the Websites of the main Employment Agencies, and the main social media used in this context (e.g. LinkedIn). The extraction relied on crawling techniques, i.e. activities carried out by a software (crawler) which automatically scans the target Websites, reads their contents and downloads a copy of the visited documents.

Although the job ads have been retrieved from several Websites, all of them share some common elements: a title, specifying the required occupations (namely the first variable to retrieve); and the text of the advertisement describing the type of job vacancy in natural language. We defined a set of variables to identify the main information reported inside a job vacancy. Such variables can be divided into two subsets: the variables of the former having a finite and well defined value domain (i.e. economic sector, type of contract, job modality, geographic location) and the latter variables being more qualitative and therefore more difficult to identify, i.e. the skills. The skills can be divided in three types: soft skills, occupation-specific skills and basic skills (see Section 4).

The next stage is to process the extracted texts to identify the (target) variable values. Unfortunately the required information are not always included in the text of the ads (e.g. contract type information may be not

included) or the lexicon is not univocal. In order to address this issue Natural Language Processing (NLP), Text Mining and Machine Learning techniques have been used.

Statistical techniques using Hidden Markov Models (Rabiner 1990; Singh 2010) have been used to identify the most relevant text portions for each variable. Then, Information Extraction techniques have been used to derive structured information from unstructured and semi-structured sources (McCallum 2005) and Named Entity Recognition tools supported us in retrieving relevant concepts in the texts.

The classification process of text requires a series of taxonomies. Taxonomy is a scheme of hierarchical classification of concepts and elements that represent a domain of knowledge. Concepts can be expressed as aggregations of several words, abbreviations, synonyms, nicknames or epithets can be used, and typing errors may affect the text. Building a taxonomy for text classification should address the aforementioned issues. In the literature there are several techniques of automatic taxonomy construction. Some are based on clustering algorithms, others on methods calculating similarities or proximity between words (Chung 2002; Heymann 2006). We used Machine Learning techniques (i.e. Support Vector Machine) (Wang 2006) to train algorithms to automatically classify a set of job ads and compiling a taxonomy of words and sentences (one for each of the variables), reflecting the lexicon reported in the Web ads.

Furthermore, the set of texts to be used during the learning task must be sufficiently large to include as many different textual expressions as possible, including the standardized language used on official documents and classifications. Some text portions may use the terminology of the Italian classification of economic activities (called ATECO2007), the Italian classification scheme of occupations (called CP2011), both created by Italian National Institute of Statistics (ISTAT). However, in many cases the job descriptions in the ads do not use the "official terminology" and this aspect stresses the lack of a univocal language between Web and institutions (Mezzanzanica 2013a).

Furthermore job vacancies are described in terms of occupations and skills in a mixed way (where concepts may be implicitly expressed). Unfortunately, it does not exist an Italian scheme of classification providing a correspondence between occupation and skills, i.e. knowledge or competences required by companies. Therefore, a dictionary of skills is needed and the created taxonomies move in this direction, as is better described in Section 4.

In order to load the extracted information into a database for (further) research purposes, a data cleaning and quality enhancement process has been performed (Boselli 2013; Mezzanzanica 2013b), but the description of this stage is out of the scope of the paper.

The data derived from the Information Extraction process just described was stored and analyzed using Business Intelligence tools and Decision Support Systems. This was very useful to address our first question. To address the second question, we compared the Web extracted information and the employment data obtained from administrative sources. The comparison was necessary to highlight the contribution that the skills analysis give to the understanding (and improvement) of the recruitment process by addressing the skill mismatch issue, as discussed in the next paragraph.

4. The Added Value of Qualitative Web Data

One of the main contributions that Web data could give to the knowledge of labour market domain focuses on the skills mismatch. The skills mismatch is a measure to calculate the gap between skills and competences owned by a worker and those required by the market. Some workers are over-skilled for their current jobs - they are capable of handling more complex tasks and their skills are underused – while others are under-skilled for their current jobs – they lack the skills normally needed for their job. This phenomenon is called in literature "qualitative skills mismatch" and can be determined by several economic factors (Cedefop 2010). Mainly during crisis periods the rate of job destruction is higher than the rate of job creation and unemployment increases. This process implicates overqualification or overskilling, two different shapes of skills mismatch.

The optimal match between jobs and workers occurs when a certain combination of skills demanded by the labour is reflected in those offered by the individual. All the measures of both the skills and the occupations are based on some form of classification and standardization, e.g. the International Standard Classification of Occupations (ISCO) or The Occupational Information Network (O*NET), but are not able to fully capture the complexity of the skills required by each occupation.

At the moment, adequate measures of the skill mismatch do not exist. The causes lie in the very nature of qualitative mismatch that relates to the broader characteristics of both the employment and the worker. Furthermore the skills relate with not measurable characteristics of the individual and economic variables to allow their precise quantification do not exist.

The general solution has been so far the use of skill surveys, but they have three main problems: 1) they are costly, considering direct (implementation) and indirect costs (opportunity cost); 2) their implementation is not easy, thus they cannot have a high frequency; 3) they have a top-down approach, i.e. soft skills and occupation-specific skills are generally pre-defined.

In this context, the analysis of Web data would potentially overcome some of the limitations outlined above for the skills investigation. First, they overcome the limitations of the (fixed) classifications by capturing the language evolution (the descriptions change over the time according to the firm and organizations requirements). Second, Web data allow us to identify the emerging skills required by the market. Moreover, Web data analysis has no implementation lag because it focuses on real time data; finally, they allow a bottom-up approach building a richer classification for skills.

Thanks to the analysis performed on the job ads, we identified some emergent professional figures, identifying the most required by the market and the desired skills. We defined a dictionary of the skills' qualities. This is a valuable source of information for several subjects.

The skills can be divided in three categories: soft skills, occupation-specific skills and basic skills. Soft skills are the personal skills, e.g. flexibility, autonomy, being capable of working in team etc. Occupation-specific skills are the professional skills related a specific occupation: for example a technical designer must know "AutoCAD 2d" or a specific programming language. Basic skills are for example to speak English or being able to use Office packets.

Furthermore, the emergent figures can be divided according to their qualification in high, medium or low level. For each of these levels we defined the skill taxonomies. In figure 1 is represented two word clouds of some skills identified for high-level occupations (i.e. technical designer).
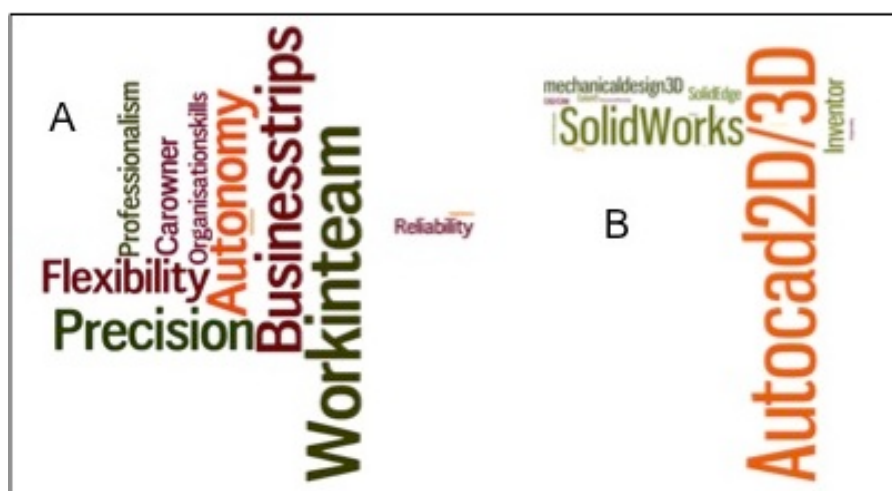
Figure 1: Word clouds of soft skills (A) and occupation-specific skills (B) of the technical designer occupation.

If we compare the description of a certain occupation made by an official classification (e.g. CP2011) and by the Web ads, the latter can provide a richer description of the job requirements as the two different channels focus on complementary information. Moreover several stakeholders might benefit from this information: for

example, job seekers could know what types of skills are required for the occupation they are interested in; companies can improve the efficiency of the search for the ideal candidate; trainers can better tailor their teaching processes.

Nevertheless, it should be emphasized that, despite the benefits described above, the Web data should be seen as complementary and do not substitute other approaches for skill identification. In fact, there are also some critical issues that limit the use of Web data. First of all, job applications posted on the Web are only a subset of the overall job applications set. In particular, the Web focuses on some specific (high-level) occupations. Secondly, the labour demand on the Web reflects the digital divide that characterizes the Italian reality.

5. Related works

The extraction of meaningful information from unstructured texts in support of various aspects of the recruitment process has been researched by several authors (Lee 2005). There are several works attempting to automate the resume management to match candidate profiles with job descriptions: for example (Singh 2010) proposes a system aiming to screen candidate profiles for jobs by extracting various pieces of information from the unstructured resumes with the help of statistical data driven techniques; (Yu 2005) designs a cascaded Information Extraction model based on Support Vector Machine for mining resumes to support automatic resume management; (Yi 2007) describes a method that uses relevance models to identify job descriptions and resumes vocabulary; (Hong 2013) develops a job recommender system to dynamically update the job applicant profiles by analyzing their historical information and behaviours. Nevertheless, few of them consider the skills as fundamental information to improve the matching.

Some works focusing on relationship between social media and recruitment systems were important for us: (Lu 2012) identifies some guidelines to design recruitment Websites by computing profile similarity patterns in structured and unstructured profiles; (Reiners 2013) studies the mutual understanding of recruiters and applicants perceptions in social networks sites and provides a literature review of Social Recruitment. However, most of these works are performed on synthetic data and not on real world unstructured data as instead we performed. Regarding our methodology, there are some points in common with the work of (Gonzalez 2012) where text mining techniques are used to manage unstructured data sources to optimize the job-matching activity, with the difference that we introduced statistical methods to perform both qualitative and quantitative analysis.

6. Conclusions

This paper has illustrated a study of the Italian labour market domain based on knowledge discovered from Web unstructured data. By resorting to a sample of job vacancy ads, automatically extracted from several recruitment Websites, and by creating a methodology for the processing of unstructured data, this study has shed light on a significant cross-section of employment demand on the Web. The developed methodology allowed to organize the collected data, classify and analyze them according to a number of significant variables of the context of analysis. Secondly, the study showed the significance and specificity of the information extracted from the Web data, as well as the identification of the added value contributed by Web data to the knowledge of a complex phenomenon such as the labour market. In the future, we intend to improve the methodology by increasing the algorithms power to automatically classify the ads. Moreover, we would deepen the contribution of Web data in the qualitative skills mismatch issue.

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Motivating Participation in Citizen Science

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Abstract: Citizen science is a process in which ordinary citizens contribute to scientific projects. Encouraged by the Internet and smart phone technologies, thousands of citizens across the world contribute to scientific projects covering topics ranging from astronomy, to protein synthesis, to species distribution. These citizen scientists solve global challenges, or draw on community knowledge to address local concerns. Citizen scientists sometimes work alone, but frequently collaborate in real-life networks, or through online platforms. Through such projects science is becoming increasingly democratized. However, a major challenge for many projects is motivating diverse citizens to participate and contribute, not just once, which is relatively easy, but continually over long periods of time, which is much more difficult. This paper reports on research that investigates what kinds of motivation factors are effective, why, and when and different factors are needed. Our research includes three studies. The first used surveys and interviews to investigate citizen scientists' motivations for initial and continued participation in three countries: USA, India, and Costa Rica. Our results suggest that initial motivation tends to be egocentric; people contribute because they are interested in a topic, enjoy learning, or receive professional benefits. Volunteers continue participation for more complex reasons. Appreciation, recognition, involvement and interaction with scientists are some of the ingredients needed to encourage sustained commitment. Cultural norms may also play a role, as in Costa Rica, where nature conservation is a strong component of the national culture and heritage. Building on this foundational research we have also investigated two specific motivational strategies: gamification, and feedback provided by scientists. Our second study, an ongoing mixed-methods assessment of gamifying a mobile application, shows that certain types of participants are motivated to compete in order to improve their score, or to gain badges that signify the value of their contribution. Additionally, participants who are not intrinsically interested in nature may be engaged through gamification. However, gamification must be carefully designed to appeal to all potential users. The third study, a field experiment, explored how feedback from scientists impacts citizen scientists' desire to continue participating in projects, and their aspiration to provide more and higher quality data. During this research we also learned that contribution level is influenced by task difficulty and the condition of working alone or collaborating with a peer. The paper concludes with general guidelines for designing projects that motivate volunteers to contribute content, both within the specific context of citizen science and for broader projects in social media.

Keywords: Citizen science, crowdsourcing, scientists, culture, motivation, gamification, feedback.

1. Introduction and Rationale:

Citizen science is a process in which volunteers contribute to scientific research, frequently in collaboration with professional scientists or other volunteers. Early and notable citizen science campaigns include the annual Audubon Christmas Bird Count, which began in 1900, and the activities supported by the British Trust for Ornithology, founded in 1932. According to Jonathan Silvertown, three key trends are responsible for the recent surge of citizen science projects and research (2009). First, new technological tools and platforms support diffusion of projects through social networks, facilitate data collection, and support data validation. Second, scientists are realizing that the public represents a "free source of labour" supporting research on unprecedented scales (p. 467). Third, granting agencies such as the National Science Foundation and the National Research Council mandate that applicants include public outreach in their project design.

Citizen science is a deeply social process. Some projects, such as the monitoring projects designed to help manage natural resources, arise directly from community concerns. Other projects begin with individual data collection, but draw volunteers together online at later stages of research. eBird, for example, collects data

through checklists containing naturalistic observations of birds. These checklists are ranked on a leaderboard so that birders may compete with one another (Sullivan et al., 2009). Additionally, eBird data is returned to the community for shared analysis and interpretation with interactive data visualization tools. Still other projects exist solely online. In Galaxy Zoo, 100,000 digital volunteers classified 40,000,000 pictures taken by the Hubble Telescope to create the largest existing data set of morphological classifications (Lintott et al., 2008). FoldIt volunteers discovered a protein crucial to the reproduction of HIV while playing a collaborative digital protein-folding game (Khatib et al., 2011).

The incredible diversity of projects makes citizen science an exciting part of social media. In this context, we consider citizen science a group of projects that often use the internet to build on the ideological and technological foundations of Web 2.0. Citizen science projects are large, complex, and not confined to a single platform (either on- or off-line). As such, these projects benefit from different social media applications at various times. For example, Galaxy Zoo volunteers may be recruited through Twitter and become part of the project's 10,500 followers. These same volunteers later join discussion forums, where they propose new research questions and contemplate ambiguous photographs. While social media can be instrumental for getting citizen science work accomplished, it's also worth noting that, as a paradigm, the goals of citizen science are identical to those of social media. Both seek to democratize information exchange by supporting content submitted by many, diverse users (Kaplan & Haenlein, 2009).

One major challenge for many citizen science projects projects is motivating volunteers. Researchers have made significant progress identifying general and initial motivations. Many of these are related to personal enjoyment, including fun, curiosity, or even wonder at the vastness of space (Nov, Arazy, & Anderson, 2011; Raddick et al., 2011; Rotman et al., 2012). Volunteers are also motivated by personal betterment, whether in the form of learning about a topic or advancing one's career (Bowser et al, 2013a; Rotman et al., 2012). Finally, volunteers express collective motivations such as supporting a community or contributing to scientific research (Nov, Arazy, & Anderson, 2011; Raddick et al., 2010; Rotman et al., 2012).

These motivations can be deceptively complex, and may change as paradigms shift; for example, while experiences were guided by personal interest in the past, future motivations will likely be driven by an interest in technology or game-like rewards (Newman et all, 2012). Different user groups express different motivations, even when discussing the same project (Bowser et al, 2013a). Furthermore, motivations change over time (Rotman et al., 2012). Temporal changes in motivation are particularly important because for many projects, data becomes valuable only as it accumulates over time. Our research, then, departs from earlier studies by focusing on the complex motivations of citizen science volunteers in new and continually changing contexts.

Our foundational research in the USA, India and Costa Rica studies the temporal aspects of motivation, and reveals that motivation for initial participation tends to be egocentric; what keeps volunteers coming back is more complex. This research also examines how cultural norms may play a role in motivation. This high-level analysis is complemented by recent work on specific motivational tactics. One line of research examines Floracaching, a gamified citizen science app designed to engage new types of volunteers. Other research examines how the type of feedback offered by scientists impacts volunteers' desire to continue to provide more and higher quality data-- a factor also influenced by the type and difficulty of the task.

2. Foundational Research in the USA, India and Costa Rica

Generally, volunteers participate in collaborative activities for a variety of reasons at both individual and group levels. These general motivations include commitment to a larger cause, reputation gains, reciprocity, learning, expression of self-efficacy, personal motivations, and empathy (e.g., Batson, Ahmad, & Tsang, 2002; Lakhani & von Hippel, 2003; Preece & Shneiderman, 2009). As noted earlier, compared to general motivations the way that motivation affects long-term participation, specifically across projects and cultures, has been studied to a lesser extent, with notable exceptions such as Bell et al. (2008).

To address this gap, Rotman (2013) conducted an exploratory study examining what draws volunteers to contribute initially to ecology-based citizen science projects, how their motivations change over time, and how culture might affect motivation. She collected survey and interview data from professional scientists and volunteers participating in collaborative ecology projects in three different countries: USA (142 survey responses, 13 interviews); India (156 survey responses, 22 interviews); and Costa Rica (9 interviews).

Motivation for initial participation. As with Nov et al. (2011) and Raddick et al. (2010), Rotman found that motivations for initial participation stem largely from self-related motivations: volunteers are inclined to participate in projects that address their interests and offer opportunities for self-advancement and enjoyment. The only exception to this was found in Costa Rica, characterized by a collectivistic nature of participation in collaborative scientific projects, associated with a national expectation for individuals' involvement in such conservation projects as an expected social commitment.

Motivation for continuous participation. After the initial decision to participate, the process becomes much more complex. Motivations for continued participation include both self-related motivations and collaborative motivations. These dictate volunteers' long-term participation regardless of the form continued participation takes (some volunteers contribute in the same capacity over time; others, move from data collection to analysis or leadership roles; still others, move from one project to another). The flip side of continuous participation is attrition. Not all volunteers sustain involvement over time. To the contrary, most beginning volunteers do not reach the phase of continued participation and drop out at various stages of a project's life cycle. Attrition rates among volunteers studied by Rotman were estimated to range between 80 to 95 percent.

Relationships within the project, predominantly between volunteers and scientists, determine to a large extent volunteers' inclination to continue participation. But creating a lasting and productive partnership between scientists and volunteers often proves to be difficult. Rotman's interviewees raised issues such as lack of trust in the ability of volunteers to handle tasks more complex than simple data collection, as well as the use of jargon unfamiliar to volunteers and the lack of contact with scientists. The more centralized or pyramid-like a project was (e.g., where the leading scientists were removed from the volunteers), the less it resulted in trust between the groups. In contrast, relatively flat projects support interaction between scientists and volunteers and led to a slow build-up of personal relationships that facilitated trust. Further, projects that offered volunteers opportunities to engage in tasks beyond data collection, (e.g. quality control, data analysis, leadership roles) and projects that supported open access to data prompted volunteers to continue their participation. Goal setting, clear communication, and acknowledgement of contributions also supported continuous participation.

The value of acknowledgement as a motivating factor for continuous participation is a strong and reoccurring theme. Most volunteers are not particular about the form acknowledgement takes, as long as some acknowledgement is made, and made publicly. A variation on this theme was volunteers' need for attribution. As with acknowledgement, attribution could be had in many ways – from a general acknowledgement that the data was obtained through collaboration with volunteers to individual credit given to specific contributors. This was especially important where the data was used for outside publications (e.g. journal and conference papers, books, and online publications). Mentorship and training also encouraged attachment to projects.

De-motivating factors. Time and technology are prominent de-motivating factors. While some volunteers appreciated intensive projects that make them feel committed to scientific goals, most balked at the thought of spending "too much time" (a subjective term that could stretch from a morning every week to continuous immersion in the field) on a project. Projects that place continuous demands on volunteers may suffer from greater attrition rates than projects that decompose tasks into manageable building blocks. Limited-scale projects focusing on a volunteer's immediate environment (e.g., in the back yard, in a local park) and require an incremental time commitment (e.g., observations for blocks of 10 minutes each, weekly or even daily) are deemed manageable, and fun. Projects that are or could be made easy through the use of technology, but fail to deliver on that aspect, frustrate and discourage volunteers (see also Wiggins, 2013). This problem was more apparent to volunteers in India and Costa Rica, where the technological infrastructure (especially mobile and web connectivity) is poor in rural areas, and somewhat limited even in urban areas.

De-motivating factors are therefore those that inhibit the "ease of participation." The projects that addressed this issue, like by allowing volunteers to contribute to scaffold tasks compatible with their abilities and spare time, or enabled volunteers to utilize good technological tools, were the ones that managed to engage volunteers for extended periods of time.

Motivating factors in different cultures. Defining what constitutes a culture is a matter for on-going debate in various domains (Geertz, 1973; Kroeber and Kluckhohn, 1952; Malinowski, 1939). We consider *national culture* the structures, values, and relationships among members of one group, situated in a specific geographic area

during a certain period. *Scientific culture* then reflects the knowledge of science by people and their attitudes toward science and technology; *collaborative culture* encourages individuals to contribute toward the common good. Four major themes related to culture are presented in Table 1.

Table 1: Cultural themes as reported by volunteers in three countries

Theme	Related concepts	Cultural effect	Country
Ethos	Pride, story-telling, symbols, values, diversity, communication	National culture, collaborative culture	Costa Rica, India
Education	Learning, formal education, informal education, fiscal support	National culture, scientific culture	Costa Rica, USA, India
Language	Interpretation, mediation, communication, distance, cultural bridges, social stratification	National culture, scientific culture	India, Costa Rica
Institutions	Hierarchy, bureaucracy, fiscal support, government agencies, partnerships	National culture, collaborative culture	India, Costa Rica, USA

A national ethos is easier to construct in small and relatively homogenous countries like Costa Rica, especially when institutionally supported and funded (in the case of ecology). It was much harder but often possible to follow the national ethos of a large and diverse country like India. The fragmentation of India into dozens of states, and the richness and diversity of social backgrounds, gave rise to alternative local ethos that varied with geographical placement and heritage. Highly individualistic cultures like the United States and parts of India favour individual initiatives and actions over collaborative ones, and place a substantial emphasis on formal knowledge and professionalism. Comparatively, collectivism is highly regarded and supported in Costa Rica, leading to broader support of collaborative initiatives involving various populations. Of course within any single country or geographic area there is a great variety of practices, norms, values, and communities.

Cultural aspects that speak to the unique aspects of each national, collaborative, and scientific culture have a substantial effect on how motivation is shaped. While this effect is nuanced it cannot be underestimated, and should be carefully evaluated before new projects are designed. Volunteers' cultural expectations and motivations should be specifically addressed to facilitate successful, long-lasting collaborative projects, and prevent high attrition rates.

3. Gamification as a Motivational Strategy - A case study of the Floracaching App

Designers increasingly use intrinsically rewarding game elements to motivate users. Researchers define gamification as the use of elements of game design in non-game contexts (Deterding et al., 2011). Gamification can lead to more frequent use (Thom, Millen, & DiMicco, 2012) and greater pleasure (Flatla et al., 2011). Gamification, including "motivations driven by interest in technology and rewards, such as online gaming badges and competitions," has been identified as a key future opportunity for citizen science projects (Newman et al., 2012). While a few gamified citizen science applications exist, such as Tiger Nation (Mason, Michalakidis, & Krause, 2012) and Happy Moths (Prestopnik & Crowston, 2012), research on gamified citizen science apps is still in its infancy.

Our exploration of gamification focus on Floracaching, a social location-based gamified app inspired by geocaching, but with plants serving as virtual caches (Bowser et al., 2013b). Floracaching is designed to gather plant phenology data for Project Budburst (http://www.budburst.org). Phenology data marks the timing of lifecycle events, such as when a perennial begins to bud, or when a tree's leaves fall. This data is valuable to scientists studying the dissemination of allergens and global climate change, and policy makers who work on agriculture or environmental conservation.

In Floracaching, the central artefact that users interact with is a floracache, or a specific plant (such as the *Quarcus albus*, or white oak in front of a campus dormitory). Users with plant knowledge create floracaches by visiting a plant, photographing it, and submitting a tentative identification through the "create a cache" mobile interface. This submission is automatically geo-tagged, so that others can find and "check into" the mapped

floracache. When users "check in" to a cache they report on the plant's phenological states (e.g., full flowering) and may optionally submit a photograph or leave a comment in the logbook.

Floracaching was created to gather data from traditional citizen scientists, as well as millennial college students who are casual gamers and technologists. Traditional citizen science volunteers exhibit complex motivations, some of which are described above, which draw contributions through any interface. It is not clear what strategies can motivate millennial college students without existing plant knowledge or previously expressed interest. To better understand how to design a gamified citizen science application that will have widespread appeal, we explored the following questions: What motivates the different user groups of a gamified citizen science application? Specifically, how do the motivations of traditional citizen science volunteers differ from the motivations of millennial college students?

We addressed these questions by iteratively designing, implementing, and evaluating the Floracaching app. Specifically, we used an iterative co-design approach for prototyping location, activities, and collective experience over time known as the PLACE method (Bowser et al., 2013b). PLACE offers a list of the elements to consider while developing location-based games and apps, and also a set of principles, including "treat participants as co-designers," "focus on activities over interfaces," and "respect authentic social experiences." Using PLACE led to a deep understanding of how to integrate game elements into core citizen science tasks.

Game elements include the use of points, leaderboards, and badges, dubbed the "PBL triad" due to their prevalence (Werbach & Hunter, 2012). In Floracaching, points are earned for various activities such as creating caches, checking in, and validating identifications. These points are charted on two leaderboards—one designed for traditional citizen science volunteers, and the other designed for general participants. We made this decision after learning that citizen scientists with domain knowledge want to compete based on activities that require skill, such as "accurately key[ing] specimens," instead of simply "getting the most the fastest" (in contrast, millennials are motivated by "any kind of competition"). Floracaching also includes badges that reward specific activities, only some of which require domain knowledge. For example, players can earn the "invasive patroller" badge by checking in to three floracaches of invasive plants. Unlike points, which are set values, badges can be continually updated to solicit different data as needed for new scientific campaigns. To date, we have formally evaluated 5 versions of Floracaching. These involved 58 participants during the PLACE sessions, 71 millennial college students in April 2013 (Bowser et al., 2013b), and 57 millennial college students in September 2013. Sessions included structured and free play with the Floracaching app, moderated discussions, and the completion of follow-up surveys.

Our research uncovered several similarities in how traditional citizen science volunteers and millennial college students relate to Floracaching. Both groups are motivated by a sense of discovery, described as the "treasure hunt feel." Both groups enjoy learning about plants, though their base knowledge is often different. Additionally, both groups consider Floracaching a social activity, and would be motivated "if I could get my friends to do it with me, or even random people." The gamification elements interest both groups, but especially millennials who see them making citizen science "more fun and less tedious" (Bowser et al., 2013b).

We also identified three key differences in how these two user groups relate to the game. First, millennial college students desire guidance, noting that the app would be easy to use if it "assigned a specific task." Citizen science volunteers, who know about and appreciate plants, prefer more autonomous play. For millennials, the app must fit into their everyday routines: "I'm not going to drive an hour just to see if some plant bloomed." In contrast, Floracaching can integrate with and augment the existing hobbies of citizen science volunteers. Finally, millennial college students appreciate challenge or competition in general terms, while traditional citizen science volunteers prefer to engage in scientifically useful challenges like mapping the range of invasive species, described as "a powerful, real thing."

4. Feedback as Motivational Strategy - The Effect of Different Types

In today's citizen science, remote collaboration between scientists and citizen science volunteers is often the norm. Most citizen scientists have very limited opportunities to communicate with scientists face-to-face. However, receiving feedback from scientists is important for volunteers, who need to know that scientists' appreciate and recognize their contributions (Rotman et al., 2012). Scientists' feedback is especially important

for enabling citizen scientists to experience a feeling of belonging to an authentic scientific community and for encouraging volunteers to continue contributing (Rotman et al., 2012).

A new thread of research explores how feedback from scientists might influence citizen scientists' motivation and their contributions. In this third study, we conducted a field experiment to examine the effects of different types of scientists' feedback (He et al., 2014, in preparation). Because we were concerned that controlling scientists' feedback in our study might disrupt a genuine citizen science project (Crowston et al., 2013), we created a simulated citizen science project named: Tree and Bird Observation on Campus (TBOC). The goal of TBOC is to encourage university students to help scientists record biological information about plants and birds living in their school campus. The authors of this paper played the role of scientists, and recruited a group of contributors to participate in the simulated project.

The different types of online feedback that we investigated in our study are adapted from a study investigating the effects of feedback among Wikipedia contributors. Zhu et al. identify four types of feedback: positive, negative, directive, and social feedback (2011, 2013). These researchers investigated the correlational nature between the different types of feedback and Wikipedia contributors' expressed motivation and actual contributions (Zhu et al., 2013). They found that for increasing the contributors' motivation, positive and social types of feedback worked best, while for increasing the contributors' effort, negative and directive feedbacks were most effective (Zhu et al., 2013). However, these effects were only significant for novice Wikipedia contributors, and not for experienced contributors. Based on this research, we decided to recruit a group of participants who were unfamiliar with citizen science.

Our experiment involved 70 undergraduate students who were new to citizen science, and who were willing to help collect data for TBOC in April 2013. Before contributing, students gained general background knowledge about citizen science including why members of the public like them are needed to contribute as volunteers. In our experiment the students were required to collect data twice, and submit it to the "scientists" using email. After we received the first set of data we, in the role of the scientists, sent feedback to the participants before they submitted the second set of data. This feedback was also delivered via email.

Our experiment considered three independent variables and three dependent variables. The type of the feedback is the primary independent variable. Following Zhu et al's studies (2011, 2013) we designed two types of feedback, positive only feedback (i.e., scientists' appreciation) and positive corrective guidance feedback (i.e., scientists' appreciation with polite guidance on how to improve future contributions). We also considered other possible factors that might influence participants' motivation and contribution and lead to confounding the effect of the type of feedback. The two factors that we considered were: working alone or together in a pair, and task difficulty (i.e., easy task and difficult task). These two factors are the second and the third independent variables, respectively. The three dependent variables are the participants' situational motivation, contribution quantity, and contribution quality. We measured these dependent variables after each outdoor data collection activity. Situational motivation was measured by the Situational Motivation Scale (SIMS) developed by Guay et al. (2000).

We ran a series MANOVA and Regression using SPSS 20 (SPSS Inc, Chicago, Illinois) to analyse the experimental data. The detailed statistics results are reported in He et al., (2014, in preparation). To summarize, results clearly showed that positive corrective guidance feedback was much more effective for increasing the students' situational motivation and their contribution quantity and quality compared with positive only feedback. This suggests that although citizen scientists expect feedback from scientists (Rotman et al., 2012), the type of feedback presented makes a difference. Providing *polite guidance with appreciation* is more effective than feedback in the form of simple *thank you notes*. Additionally, among the other two factors, we found that working alone or together in a pair had a partial moderator effect on the type of feedback. The extent to which the solo students' contribution quantity was changed by different types of feedback was much larger than in the paired condition, indicating that positive corrective guidance feedback works better on increasing the contribution quality of solo citizen science newcomers. All the results summarized in this paragraph are statistically significant.

5. Take Away Messages

Our research will benefit citizen science project managers, and also the researchers and developers who solicit user-generated content through various forms of social media. The first and most obvious message is that understanding motivations of desired participants is an extremely complex undertaking. Volunteer motivation changes over time, varying with demographics, previous experience, and the context of a given activity. Specific considerations include:

- Newcomers are motivated by different factors than returning contributors.
  - Newcomers tend to be motivated by personal interest.
  - It is much harder to motivate people to return than to participate initially.
  - Feedback, acknowledgement, and connections with scientists are strong motivators for returning participants.
  - Technology that is time-consuming or difficult to use is a strong demotivating factor.
- National culture and norms can have a powerful effect on participants' behaviour.
  - Collectivist cultures support norms of contribution and participation.
  - The impact of culture needs to be regarded with care as countries vary considerably from region to region.
- Different user groups respond differently to reward elements such as gamification.
  - Gamification can engage a new audience of millennial technology enthusiasts and casual gamers, particularly through competition.
  - But, these initiatives must carefully avoid alienating more traditional volunteers.
- Feedback can be a strong motivator, but the type of feedback matters.
  - Knowing when to give directive feedback rather than just a friendly acknowledgement is important.
  - Other factors such as task difficulty and whether participants work alone or in pairs can change the impact of the feedback.

Understanding motivation in all its complexity will support better project design, more data, and broader impacts. Researchers studying user-generated content in related types of social media can also benefit from this work—especially when they seek to understand continued and incentivized participation.

6. Future work

We described the study on temporal and cultural motivation as "foundational." This work is compiled in a dissertation (Rotman, 2013). Our future work with Floracaching follows a number of converging paths. First, we plan to conduct isolated evaluations with traditional citizen science volunteers. We will also explore design techniques for supporting social interaction between our two user groups. Finally, we are designing an experimental manipulation based on quests to determine the impact of different motivational elements on participation over time. Future work on feedback type will also be pursued. Our findings on the relationship between task difficultly and contribution level are complex; while participants contribute more data to easy tasks, the influence of feedback type appears to be a confounding variable. Future research will examine this in greater depth, and may also explore feedback given through different channels, perhaps comparing 1-on-1 forms such as email to larger recognition on platforms such as Twitter, Facebook, and project web pages.

7. Note

Dr. Dana Rotman of the University of Maryland passed away in May 2013. This paper incorporates the results of a study completed before then.

Acknowledgements

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The Small Business Social Media Web Presence: An Australian Snapshot

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Abstract: When compared with their larger counterparts, small businesses are typically affected by resource poverty (limited time, funds and skills) when using information and communications technologies such as social media. This results in mainstream small business typically adopting these technologies at a lower rate, or taking longer to adopt them. These days, small businesses rely on more than just their website to form part of their web presence. Many also have a presence on a combination of third party websites: business directories, web portals and various social media platforms. One way of examining online activity is by the use of Angehrn's (1997) ICDT framework, which classifies these activities according to four 'spaces': one-way (I)nformation delivery from business to customers; (C)ommunication with customers; (T)ransactions with customers and online (D)istribution of goods. With social media, one would expect activity in the communication space. This article reports on a study of 153 Australian small businesses across ten industry sectors, their associated web presence and particularly any evidence of the use of social media: classifying these activities according to ICDT spaces. The study revealed that almost two-thirds (64%) of the small businesses had a website, and virtually all (99%) of the businesses had a presence on third party websites. The proportion of small businesses with websites and the extent of the presence on third party websites differed across industry sectors. Social media activity was examined in three ways: social media activities on the business website; third party websites that allowed visitors to place product reviews (typically business directories) and businesses with a presence on a dedicated social media website (such as Facebook). There was little evidence of social media activity in business websites, with 4% of businesses having a feature that included active 'noticeboards' or blogs where visitors could contribute content. Nearly half of the businesses (46%) had engaged a third party website (usually a business directory), that had a facility for customers to post a *review* of the business. This review typically involved written comments, but many also provided an option for customers to rate a business' products and/or services. The activities described thus far were in Angehrn's information and communication spaces. Some 26 businesses (18%) had a presence on a dedicated social networking website, typically Facebook. However, most of these (15) offered only basic information and images of the business. In other words, there was no evidence of Angehrn's communication space. Only seven of the businesses had what could be described as an active social media presence, with information and photos, but also customers posting comments and reviews and rating the businesses. Another three of the businesses had this facility, but there was minimal evidence of customers posting comments.

Keywords: Small business; social media; web presence; analysis

1. Introduction

Little is known of the extent of small business use of social media. Small businesses generally adopt information and communications technologies (ICT) at a lower rate than their larger counterparts, and early evidence suggests that this is also the case for social media applications. Employing a website content classification approach, this study examines the social media activities of 153 Australian small businesses, examining not only social media activities on their own websites, but also on third party websites.

2. Background

For the purposes this article, a small business is considered to be any business with 1-20 *regular* employees. The use of ICT is hampered in many small businesses by resource poverty (limited ICT skills, limited finds to invest in ICT and limited time to devote to ICT). Small businesses tend to adopt ICT at a lesser rate than large businesses (Burgess, Sellitto and Karanasios 2009). A recent study of 1800 small and medium sized businesses in Australia by Telstra Corporation (2013) showed the levels of ICT adoption in Australia tended to be lower for small businesses than medium sized businesses (with 21-200 employees) in regards to ownership of ICT devices (such as desktop computers, notebook computers and mobile phones), the number of Internet connections and adoption rate of business websites. Adoption levels of ICT can also vary across small businesses according to industry area and location (metropolitan, rural, remote) (Burgess 1998).

2.1 Web Presence versus Website

Small businesses are now using *web portals* and/or *regional* or *business directories* as part of a presence that extends beyond business websites. These extended websites can be collectively called *third party websites*. A

web portal can be described as a "collective activity using the Internet to present businesses via a collective brand, most often industry or location-specific" (Galloway, Sanders and Deakins 2011: 254). Van Brakel (2003) suggested two main categories of portals: *Horizontal portals,* which are general purpose and restricted to certain regions, and *Vertical portals,* which are used by particular groups, such as industry users or groups with *specific* interests (such as hobbies) (Sieber and Valor-Sabatier 2003). A business directory can also be industry or location-specific and offers less features than a portal, such as basic business information and sometimes a capability for customers to post reviews. Whilst literature related to portals is growing (Galloway *et al* 2011), there is a lack of studies into small business use of portals.

The combination of business website and presence on third party websites can be considered to be the *web presence* of a small business. As this article examines the content of the small business web presence for the purposes of examining social media activities, it is useful to briefly visit an approach to the classification of web presence content. Angehrn's (1997) ICDT model identified different online 'spaces' that could guide businesses in regards to the selection of different website features for their online presence. These spaces are:

- *Virtual information space* – where information, such as business contact details, product description and other company information is passed one way from business to customer.
- *Virtual communication space* – where the business engages in online communication with customers. This can occur a number of ways, such as via email or social networking.
- *Virtual distribution space* – where automated delivery of goods occurs (for instance, online music or books).
- *Virtual transactions space* – where direct access to business databases, automated orders and/or automated payments occur.

2.2 Social media and small business

Cheek, Ferguson and Tanner (2013) proposed the 'social media tool chest', which incorporated five categories of social media:

- Social networking websites (such as Facebook)

- Photo/image websites (such as Flickr)

- Blog websites (such as Wordpress)

- Search engine optimization (SEO) websites (such as Google)

- Others (such as YouTube and Twitter). Sites that allow for customer reviews, such as business directories, would fit into this category.

There have been some studies of the use of social media by small businesses, but they are not extensive in number. Michaelidou, Siamagka and Christodoulides (2011) examined the use of social media by small businesses in the UK that engaged in mainly 'business to business' activities. Whilst just over a quarter of the businesses used social media to attract customers, very few evaluated its effectiveness. The most common reason for its non-use was a perceived lack of relevance to business activities. Derham, Cragg and Morrish (2011) conducted a case study involving the use of social media by a small restaurant in New Zealand, and identified a number of different types of value identified from the social media practices of the business. Nakara, Benmoussa and Jaouen (2012) examined the social media marketing practices of French SMEs and determined that the businesses underused social media tools. In their study of 1800 Australian SMEs, Telstra Corporation (2013) found that 35% of participants indicated that they used social media for business purposes, with the majority of these (93%) using Facebook, with Twitter (28%) and LinkedIn (17%) also used. Only 4% of respondents indicated that they were likely to have a 'blog'.

In addition to resource poverty, there are various reasons for lower levels of adoption of ICTs such as social media by small businesses. Small businesses owner/ manager often develop their ICT strategies and these strategies are dependent upon their specific ICT skill levels. As an example, 20 per cent of small and medium sized businesses (SMEs) indicated that lack of knowledge was a reason for not having an Internet connection (Department of Innovation, Industry, Science and Research 2011). Also, many small businesses are conservative in their use of ICT (Burgess et al, 2009). They underestimate the complexity of the technology they use. Whilst technologies such as social media can provide them with significant opportunities to be more strategic, small businesses can be unaware of the increasing risks of their use in a more interconnected

business environment (Carson 2013). Use of social media could increase reputational risk as a result of unfavourable exposure. This is not well understood or even recognised by SMEs.

This article examines the social media activities of small businesses in order to expand awareness of such use. Of interest in this study is to what extent small businesses actually engaged in social media activities as part of their web presence.

3. Methodology

This study involved an analysis of the content of a sample of Australian small business websites and their presence on third party websites. The study was conducted between late 2011 and mid 2012. Third party websites employed by Australian small businesses across ten different business sectors were examined. The Australian and New Zealand Standard Industrial Classification (ANZSIC) industry classifications were used to classify businesses into industry sectors. These classifications are used by the Australian Bureau of Statistics (www.abs.gov.au). The classification has 17 major divisions, of which 10 were selected by the author for this study. The intention was to match the selection of divisions as closely as possible to the Telstra Corporation (2013) study classifications. Table 11 provides a comparison of the industry sector classifications used in the Telstra Corporation (2013) study and this study. Small businesses were sourced from the Yell123 Australian Business 2010 database, which provided a classification of businesses by employee size and industry sector. For this study, businesses with an employee size of 1-19 employees were included – thus satisfying the 'small business' requirement for the study. The business classifications in Yell123 were not an exact match for the ANZSIC sub classifications, but Table 1 shows that they were a close match.

Table 1: Comparison of industry sectors used in this study and Telstra Corporation (2013) study

Industry sector in Telstra (2012) study	Industry sectors in this study
Communication, property and business services	Professional, Scientific and Technical Services
Accommodation, cafes and restaurants	Accommodation and Food Services
Cultural, recreational and personal services	Arts and Recreation Services
Wholesale trade	Wholesale Trade
Finance and insurance	Finance and Insurance Services
Retail trade	Retail Trade
Manufacturing	Manufacturing
Transport/ storage	Transport, Postal and Warehousing
Health and community services	Health Care and Social Assistance
Building/ Construction	Construction

Additionally, ANZSIC sub classifications (in each classification) were also incorporated as part of the selection process for small businesses for the study to provide a spread of businesses within each classification.

Some 153 businesses were selected for the study, with the breakdown across industry sectors as shown in Table 2. Differences in the number of participating businesses across sectors reflected the different number of small businesses that were available in the sub classifications of the Yell123 database. Each of the sub classification strata had a different number of small businesses. Some had less than the number of businesses required, so in those cases all were considered. Others had more than the required number, so in these instances each 'nth' business was selected, with 'n' representing the overall number of businesses divided by the number required for the strata. The individual business details were then stored in a Microsoft Access database that had been specifically built to store the data. This data was linked to a Microsoft Excel spreadsheet to develop the graphical versions of the web presence pyramid model.

Table 2: Summary of main study findings by Industry sector

Industry sector	Number of participating businesses	% of businesses with a website	% of businesses with a third party web presence	Average number of third party websites per business
Professional, Scientific and Technical Services	12	92	92	10.9
Accommodation and Food Services	16	81	100	15.5
Arts and Recreation Services	16	75	100	12.4
Wholesale Trade	12	75	100	10.6
Finance and Insurance Services	18	72	94	13.0
Retail Trade	18	67	100	15.9
Manufacturing	17	59	100	17.9
Transport, Postal and Warehousing	14	50	100	10.2
Health Care and Social Assistance	14	43	100	8.1
Construction	16	31	100	16.2
Total	**153**	**64**	**99**	**13.4**

One research assistant carried out all of the classifications in this study. The first step involved determining how many participating small businesses had a website. This involved a simple search for the business name using the search engine 'Google'. If an operational business website could not be found in the first three 'web search' pages (10 search results per page) then the business was classified as not having a website.

Overall, 64% of small businesses in the study were deemed to have had a website. This compared well with the Telstra Corporation (2013) study. An industry sector comparison between the two studies also showed similarities in adoption levels. In that study the *accommodation, café and restaurant* sector had the highest website penetration with the *building and construction* sector having the lowest penetration (46% penetration - higher than this study).

One interesting aspect of the study was that the approach used to identify small business websites and their associated third party websites identified very few business Twitter accounts (only two overall). The Telstra Corporation (2013) study of Australian SMEs suggested that a higher proportion of small businesses than this would have Twitter accounts. The authors felt that this was an anomaly – so revisited the websites of 20 randomly selected businesses – specifically looking for their 'Contact Us' page. This page revealed that four of the 20 businesses had a Twitter account. It was thus decided to eliminate Twitter from the research project as for some reason these business accounts did not rank highly on the Google search engine pages. Table 3 summarises the social media activities examined in the study.

Table 3: Social media activities examined in this study

Category used in this study	Relevant Website features	Equivalent Third Party website features
Reviews	Customers posting reviews direct to website	Sites that allow customers to post reviews (such as Tripadvisor)
Social networking	Bulletin board; blog;	Social networking websites (such as Facebook)

4. Results

For the study, social media activity was examined in three ways: social media activities on the business website; third party websites that allowed visitors to place product reviews (typically business directories) and businesses with a presence on a dedicated social media website (such as Facebook). Table 4 provides an overview of the types of social networking features that were found as the small business web presence. It shows that most social networking features occurred on third party websites, and few were featured on business websites themselves.

Table 4: Proportion of businesses with review features and social networking features on web presence

Category	Websites (%)	
	Review features	Social networking
Percentage of business websites with feature	0	4
Percentage of third party websites with feature	46	1
Percentage of businesses with at least one third party website with feature	99	18

The remainder of the article examines the different types of social media features that were discovered for the small businesses in the study sample.

4.1 Websites – social networking

Table 5 shows the percentage of business websites with social networking features. There was very little evidence of such activity. None of the business websites included a feature where customers could post a review of products or services. Of the businesses that did have a social networking feature, an office equipment store had a 'Have your Say' section – customers were encouraged to "Feel free to fire a question, add a suggestion, or whatever you would like to our "have your say" and receive a human generated reply".

Table 5: Proportion of businesses with review features and social networking features on business websites

Category	Websites (%)	
	Review features	Social networking
Percentage of business websites with feature	0	4

A veterinary hospital provided a noticeboard where customers could post 'pet related' queries, with themed categories around different animals (eg dogs, cats, guinea pigs). An art gallery published various thoughts and ideas about the art displayed on the website and the creative process in general. The public were invited to contribute their thoughts to these. Finally, a Chinese acupuncture business published a blog on topics related to the treatments that they offered. The general public were invited to comment upon these articles. The small business websites were typically dominated by information space features, but also had a number of communications space and transactions space features. The communications space features were typically in the form of email addresses or forms that allowed customers to contact the business directly, not via social networking as such.

4.2 Third party websites – reviews

There were many more examples (123) of third party websites, typically business directories; with review features (refer Table 6). That is, customers were able to post reviews of the products or services offered by the business. Virtually all (99%) of businesses were linked to **at least one** third party website with such a feature.

Table 6: Proportion of businesses with review features on third party websites

Category	Review features (%)
Percentage of third party websites with review feature	46
Percentage of businesses with at least one third party website with review feature	99

Nearly half (46%) of the third party website that were identified had a facility for customers to post a 'review' of the business. This review typically involved written comments, but also a combination of ratings (typically up to 5 'stars') and other ways of rating the businesses' goods.

In all, 19 different third party websites with review features were identified. Table 7 shows the breakdowns of these and a summary of the types of features that visitors were provided as part of their reviews.

Table 7: Breakdown of review features on third party websites

Category of third party website	Representation in sample	Written review	'Star' rating
General business directory	16	16	12
Travel/ Tourism directory	2	1	1
Gastronomy directory	1	1	-
Overall	**19**	**18**	**13**

For the most part, the reviews were written. In a few instances the written reviews were split into different categories (such as 'your experience' or 'your recommendation'). A number of directories also offered a chance to rate the business product or service. Typically this was a simple one (poor) to five (excellent) rating, signified by a number of 'stars' that could be selected. One business directory allowed for more than one 'star' rating per business (for service and value), as did the gastronomy directory, which allowed its visitors to provide ratings in regards to food, ambience, service and value.

It should be pointed out that whilst nearly half of the third party websites had some type of 'review' feature available – very few of these websites were active in regards to customer reviews. It appeared that most businesses linked to these directories because they were low cost (actually, most were no cost) with the idea that they could potentially increase their market share. With so many business directories available and so few actually having active customer reviews it appears to be an area where some form of consolidation is yet to occur. There were a small number of directories that did show evidence of active review posting by visitors - perhaps these may be the ones that survive such a consolidation.

In summary, these directories tended to operate in Angehrn's information space (with basic business contact details typically provided) and the communications space (where visitors could post reviews).

4.3 Third party websites – social networking

This section examines those third party websites identified in the study that offered social networking features (refer Table 8). Whilst only 1% of all of the third party website presences identified offered social networking features, it is important to note that **nearly one in five** small businesses (18%) had a presence on at least one such third party websites.

Table 8: Proportion of businesses with social networking features on third party websites

Category	Social networking (%)
Percentage of third party websites with feature	1
Percentage of businesses with at least one third party website with feature	18

Of the 26 businesses that had a presence on a dedicated social networking website, 25 had a presence on Facebook and two had a presence on Four Square (one business had a presence on both websites). However, most of these (14) offered only basic information and images of the business – in other words, there was no evidence of Angehrn's communication space. Another two Facebook pages had no content at all. Only seven of the businesses had what could be described as an active social media presence, with information and photos, but also with customers regularly posting comments, reviews and ratings of the businesses. Another four businesses had this facility, but there was minimal customer activity. The different types of presence are summarised in Table 9.

Table 9: Breakdown of social networking features on third party websites

Presence classification	Number of businesses	Typical activity
Full social networking	7	Business information; photographs; some events; reviews; 'likes'; active posting
Some social networking	4	Business information; some photographs; reviews; 'likes'; some posting
Brochureware website	14	Business information; photographs; 'likes'
No activity	2	No content
Total	**27**	

5. Discussion

This study has provided some insight into the social networking activities of Australian small businesses. Small business websites typically provide information for customers (information space), facilities for customers to contact them (communications space) and, to a lesser extent, the ability for customers to place orders and make payments (transactions space). The lack of social media activity identified on small business websites (4%) suggested that the majority of social media activity occurs away from the small business website.

Small businesses typically have a presence on a number of third party business directories. These sites provide basic business information (information space) and almost half of them provide the capability for customers to post business reviews (communications space). The large number of these directories in operation and the associated lack of reviews posted on many of these sites suggest that some consolidation of business directories is yet to occur.

Probably the most interesting finding in regards to social media activity occurred in regards to dedicated social networking sites. Nearly one in five businesses had a presence on at least one such site (typically Facebook). However, only seven of these businesses (just under five percent of the entire sample) had an *active* social media presence. The majority of these websites were effectively just another type of information space website. The Telstra Corporation (2013) study, conducted after this study, suggested that nearly one in three businesses used Facebook – so it is reasonable to suggest that the overall usage is growing. However, the results of this study suggest that the type of presence on sites such as Facebook should be investigated to reveal the extent of *actual* social media activity on these websites.

6. Conclusion

This study has provided a unique insight into the social media activities of a sample of Australian small businesses. As expected, social media activity was minimal on the businesses' own websites. However, there is

a potential for much greater activity on third party websites. Small businesses in the study typically subscribed to many different business directories. Almost half of these provided a facility for visitors to post reviews. Although there was not a great deal of evidence that suggested that this facility was widely used, there were some directories where reviews were posted on a regular basis. It is important to understand that although one in five businesses in the study were associated with a social media site such as Facebook, not all of the these could be considered active in regards to social media. In fact, the majority were effectively just operating in Angehrn's information space. Claims in regards to the penetration of 'social media' in small businesses should therefore go beyond simple measures of how many have set up pages on social media websites. In regards to generalisability, this study was quite significant, examining the websites of 153 businesses (where they existed) and over 2000 separate third party website presences – across ten industry sectors. The authors believe that these results could at least be generalised to Australian small businesses and possibly other similar studies. In regards to limitations, the authors warn against assuming that the results suggest that small businesses do not have a strong Twitter presence. It is believed that the lack of evidence of use of Twitter in this study is due to it not appearing in the main search engine pages that were examined when third party websites for each business were searched. A separate strategy should be used to examine Twitter use in small businesses.

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Exploring User Behavior and Needs in Q & A Communities

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Abstract: One of the difficult challenges of any knowledge centric online community is to sustain the momentum of knowledge sharing and knowledge creation effort by its members through various means. This requires a clearer understanding of user needs that drive community members to contribute, engage and stay loyal to the community. In this paper, we explore the applicability of Abraham Maslow's theory (1943) to understand user behavior and their latent needs using Exploratory Factor analysis. Results show that users are largely driven by four main needs: social interaction, altruism cognitive need and reputation. Our results further indicate that users with high reputations are more likely to stay longer in the community than others, and that socially motivated users are responsible for increased content creation.

1. Introduction

Many organisations are now taking serious note of managing their online communities, which are fast becoming knowledge hubs for their employees as well as for customers. Despite the huge success of virtual communities as communication tool, little is known how and why community users participate and contributes. Active participation, quality content creation are crucial for the viability of content based online communities (Koh et.al,2007). Based on this premise, researchers have started identifying various motivations of user participation and contribution in such communities (Nov et al, 2008). Identifying the motivations that drive user participation, engagement and contribution would help community managers, developers, and analysts to gain insights into how these communities thrive and survive. A clear understanding of user motivation will not only help community managers for efficient management, but will also provide great benefits to system designers in developing dynamic and self-adapted online social systems.

In this paper we focus on Question and Answer (Q&A) communities in an enterprise setup where users create, share, discuss issues ranging from product development, services, technical support etc. It allows users to follow other users, award points to other users for their contributions. In particular we address the following research questions: *What different user needs are satisfied from community participation and contribution? how do these different needs correlate with user behavior?*, and finally *do the needs and their evolution, follow structural map of Maslow's hierarchical need theory*?

Hereafter, we begin with a literature study of the area in section two, section three describes the model mapping followed by experimental details in section four. Finally we conclude with few limitations in section five.

2. Related work

Many existing studies have investigated the motivations for online participation and contribution suggesting a wide range of personal and social factors (fun, knowledge seeking, social identity, esteem etc.) as reasons for online participation and contribution. Existing literature in this area can be broadly organized in two categories; (1) investigations on the use of social theories to understand user motivation, and (2) research on method of study, e.g. survey and questionnaire vs. data centric analysis methods. We will briefly describe example studies from these two categories.

2.1 Use of Social Theories To Understand Online User Motivation.

User behavior and motivation to participate and contribute in online communities has been grounded with various existing social theories ranging from Uses and Gratification theory (U&G), collective action theory, self-determination theory, theory of reciprocity, social identity theory to name a few. Lampe et.al (2010) used U&G theory to explain the influence of belongingness, social and cognitive factors in user participation, while Dholakia and colleagues (2004) studied the motivational role of group norms and social identity and suggested six benefits for users including information seeking, sharing and reputation. Wask and Faraz (2005) used the

theory of collective action to explain the motivational influence of expected reputation in contributing to professional forums. Studies by (Hars & Ou, 2002) described the role of intrinsic and extrinsic motivators in content contribution. Krasnova et. al.(2008) suggested need for belongingness, esteem and peer pressure as prime motivators for participation and contribution. Burke and Lento (2009) emphasized the positive role of social learning and feedback on new users in Facebook. Chiu and colleagues (2006) used Social Cognitive Theory and Social Capital Theory to explain the impact of social ties, reciprocity and identity on users' contribution. Joinson (2008) identified seven uses and gratification (U&G) of Facebook use. These themes are social connection, shared identities, content, social investigation, social network surfing and status updating. Contribution to open source projects are motivated by self-development, reputation and altruism (Oreg et. al., 2008) while fun and ideology proved to be the prime motivators for Wikipedia contribution (Nov, 2007).

2.2 Self-Report Vs. Data Driven Approach

Majority of studies on user motivation follow the self-reported feedback method to collect data about a user's reason to participate as compared to data driven approaches where server logs are used to analyse user behavior to infer motivation. Self-reported approaches carry the limitations of sample size, recall bias (Brewer, 2000), and bias of social desirability (Crowne & Marlowe, 1960). Lately, data driven approach attracted researchers attention due to easy availability of large amount of user data. A combination of user interviews and server log data of Knowledge-iN; a large South Korean Q&A community, was used in the study by Nam et.al. (2009). This study revealed five motivations for contribution, including helping others, self-promotion, learning, recreation and reputation points. Similar to this study, in this paper we use a data-centric approach, where users' actual activities and interactions in the community are extracted, and used for a pragmatic correlation between user needs and behaviour.

3. Mapping Maslow's Hierarchy to Online Communities

Maslow's theory on human needs and motivation provides a powerful theory of human behavior. He proposed five different needs that drive human behavior at every stage of life depending on the satisfaction of the most pre-potent needs. These needs often visualised as a pyramid to reflect their order and satisfiability quotient. In this section we describe how we map Maslow's pyramid to the domain of online communities (figure 1). This mapping enables us to study the needs of users in online communities in light of Maslow's needs hierarchy.

Physiological and Security needs: are at the bottom of the hierarchy and are considered very basic needs for survival, which includes the need for food, housing, etc. In the context of the online world, these needs may be translated into system access, hardware requirements such as computer, community access, online identity, etc. We presume that these needs are already met when users join an online community, and hence they not the focus of this paper.

Need for Belongingness: reflects users' desire to be part of the community, have interpersonal relationship and a sense of acceptance from their social group. In the context of social media, this need may be translated into a need for connection, making friendships, being part of an interest group etc. In Q&A communities, connection is made through replies, comments and voting, which can be considered as a proxy for the desire to establish such social connections.

Need for self-esteem: According to Maslow, the need for reputation and self-esteem emerges once the individual is settled with his social identity through groups and communities. For online communities, reputation seems to be one of the strong motivators in many previous studies (see section 2) It makes intuitive sense that users of professional and Q&A communities would wish to be recognized among their peer groups, and hence their desire to excel could be reflected by specific community behavior, such as answering more questions, attempting complex questions etc..

Need for Self-actualisation: Maslow's original theory proposed self-actualisation as a difficult phase to reach. This stage is characterised by attributes such as efficient perception of reality, creativity, spontaneity in ideas and actions, interest in helping others (altruism), etc. Although it is difficult to claim that online communities satisfy user's self-actualisation need, such social environments enable more users to be helpful to others, e.g., by replying to other's questions, and contributing towards the community's benefits. Here we focus on the characteristic of altruism.
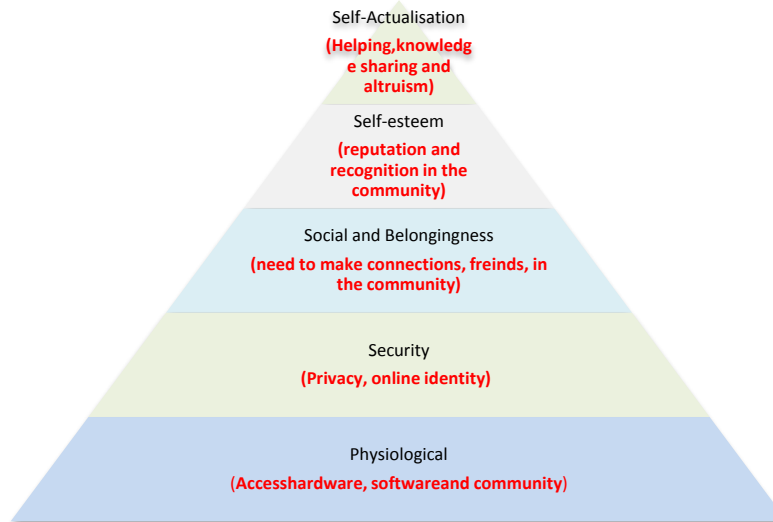
Figure 1: Maslow's Pyramid and our mapping (in red) to online Q&A communities.

This study involves two subsections (1) Factor analysis of user features in order to identify possible need factors and (2) analyse the evolution of need factors over time.

4. Experiment

4.1 Dataset and Feature Engineering

To ground our work, we used SAP community network (SCN) for user behavior analysis and need identification. SAP community network is a collection of forums focusing on various SAP related products, services hosted by SAP. SCN has a reputation system where users are awarded points and badges for their quality contribution. The snapshot of data provided for this work consists 34 different forums with 95200 threads and 427000 posts from 32926 users.

Need and behavior are often confused and used interchangeably. A finer distinction exist between these two concepts where need is considered subjective and non-observable while behavior is observable and taken as external manifestation of internal need. To measure needs we need to measure behavioral intensities, accordingly we extracted features relevant to users within an online community:

- *Community Age* is the duration of time user is active in the community.

- *Forum Focus* indicates dispersion of users attention between number of forums within the community. A higher score indicates wide focus while a small score indicates concentration..

- *Post frequency (PPM)*: number of posts created by a user per time interval (here in a month).

- *Initiation share*: proportion of threads started by a user in the community.

- *Reply share:* proportion of replies given by a user in the community.

- *Initiation ratio*: user's ratio of initiation to his replies.

- *Reply ratio*: user's ratio of replies to his initiation

- *Self-reply ratio*: user's ratio of replies directed towards ones own initiated thread.

- *Normalized Content Quality (NCQ)*: indicates the average score a user gets for each contribution (total number of points / number of posts). We use NCQ as a reflection of user *reputation* .

- *In-degree*: proportion of unique users replied to user, alternatively termed here as "popularity".

- *Out-degree*: proportion of unique users that user has replied to, alternatively termed here as "engagement".

- *Between-ness centrality*: degree of centrality of a user within the reply network.

- *Tie strength*: indicates the strength of interactions of a user ranging between 0-1.

- *Topic Focus*: High score indicates, spread while low score is an indication of focus.
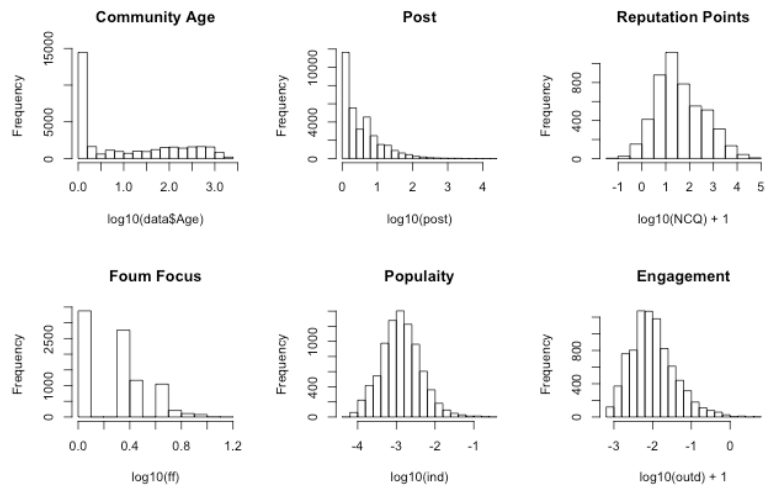
Figure 2: Distribution of some major user related features observed in SAP dataset.

To clarify further, we plot the distribution of important attributes such as community age, number of posts per user, reputation points, forum focus, popularity and engagement scores of community users in Figure 2. Despite many other variations, most of the behavioural features are characterised by a common pattern of heavy tailed distribution; further indicating dominance of specific features for certain cluster of users.

4.2 Features To Factors

Mapping user features to any motive or need is non-trivial. Each motive/need may be reflected through one or more user features. In order to get a better understanding of these features and how they correlate with each other we, use the Exploratory factor Analysis approach. Exploratory Factor Analysis (EFA) is a multivariate statistical approach used in social science research for factor discovery by reducing a large number of variables into a smaller set of variables (factors). EFA involves five fundamental steps;

(1) Feature Correlation.
(2) Number of factors to be extracted.
(3) Method to extract factors.
(4) Choosing a rotation method.
(5) Interpretation and factor labeling

4.2.1 Correlation Matrix

Inter-feature correlation (figure 1) shows that features exhibit both negative and positive relationship with different degrees while some features seem to be independent.
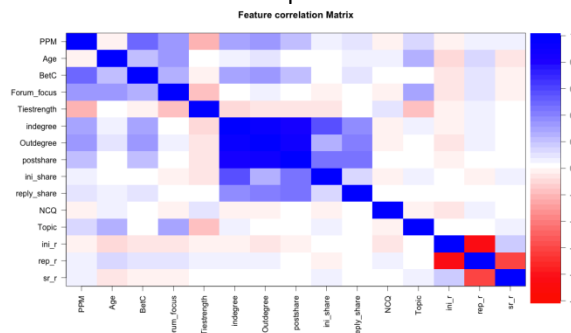
Figure 3: Correlation matrix between user features.

The correlation matrix (Fig. 3) reveals a weak positive relationship between a user's reputation and reply behaviour (r =. 17) while it is nearly un-correlated (r=. 01) with overall contribution volume. However, this unexpected lack of correlation is not statistically significant. The strongest correlation for contribution volume is observed with social attributes such as in-degree, out-degree distribution and centrality measure (r=. 25, .29

and .82 respectively, p = 0.001). High topic entropy is also positively related to <u>the overall contribution</u> (r=. 55, p = 0.01).

4.2.2 Number of factors to be extracted

Decision on how many factors need to be extracted is mostly subjective and explained by multiple criteria e.g. scree test (Cattell 1966), parallel analysis (Thompson 1996), Kaiser's (Kaiser,1960) Eigen value criteria (>1.0) and theoretical perspective. Given the available choices and their nuance differences, Thompson and Daniel (1996) suggested simultaneous use of multiple criteria for an ideal solution. We opted for scree test (fig. 4), Eigen values threshold and parallel analysis to select the number suggested by the majority of the approaches, in our case it is 4 to 5.
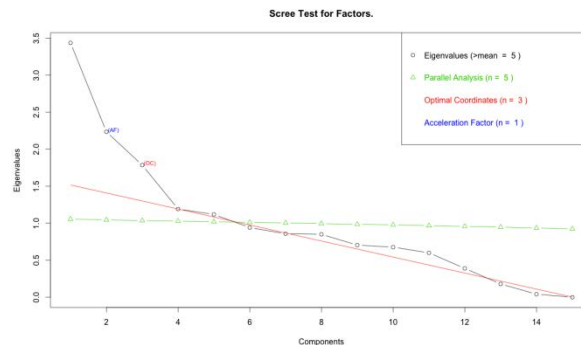
Figure 4: A scree plot showing number of factors to be extracted from the list of features.

4.2.3 Factor extraction method

Maximum likelihood, Principal axis factoring (PAF), and Principal Component analysis (PCA) are some of the known factor extraction techniques. Each method aims to reduce the number of observed variables into groups of correlated variables. The most popular methods are PAF and PCA (Henson,2006). Although both techniques give mostly identical results in terms of factor discoverability, their underlying mechanism to group variables differ. While PCA takes into account both unique and shared variances between observed variables, PAF only considers the shared variances. We decided to use both approaches in our experiment to get a broader picture.

4.2.4 Rotation Method

Individual features may be loaded onto more than one factor making the result difficult to interpret. Hence Factor analysis involves rotation techniques to maximize the high loading items and minimize the low loading variables and making factor interpretation more reliable. There are two categories of rotation techniques; (1) orthogonal and (2) oblique rotation. Orthogonal rotation produces uncorrelated factor structure while oblique rotation treats factor as correlated. From each method we have multiple options (varimax, quartimax, oblimin etc.) to choose from depending on the data requirements.

Regardless of any rotation and factor extraction method, the objective is to produce a more interpretable and conceptually suitable solution. As per the suggestion of Pett, Lackey, and Sullivan (2003) we tested both the rotation and factor extraction techniques to find the best fit.

4.2.5 Interpretation and factor labelling

Following the multiple criteria suggestion to determine the number of factors to be extracted, we decided to extract 5 factors (table 1). Next, we run the factor analysis to get the loadings for each of the factors. PAF using oblique rotation explained 54% of variance through four factors while analysis using PCA resulted in 65.1%(.651) of data variance explained. In the analysis using PAF user reputation (NCQ) did not load on any factors. Absence of reputation related factor is surprising since reputation seems to be a strong motivator, especially in professional communities (Lakhani et.al,2005). However, with the second analysis using PCA and varimax rotation, reputation is loaded onto a single factor accounting for 7% of variance. We selected those features with a loading threshold of >.4 and features that had cross -loaded significantly were discarded. These five factors represent different aspect of user behavior in the community.

Factor 1 pre-dominantly includes features concerning user's social network properties such as in-degree, out-degree. It is not surprising to see that users high on this factor are high in their overall contribution (proportion of individual posts in relation to the community posts). We label this factor as one that belongs to "*Socially active users/engagers*".

Factor 2 comprised of three features related to the user's contribution behavior e.g. initiation, reply and self-reply. We found that both PAF and PCA consider this as the second most important factor with 18% and 14% variance respectively but the direction differs. In factor analysis with PAF this factor gets a positive loading from the reply ratio and negative loadings from both initiation and self-reply while the directions are exactly opposite in PCA. Nonetheless in both cases the factor is clearly focused on contributing behavior of the user. These features reflect the purpose of contribution whether the contributions are of type information seeking or information or knowledge sharing thereby helping others. We term this factor as "*Askers and Repliers*".

Factor 3 related to the user's activity frequency such as number of posts per month (PPM), number of forums he participates (forum focus) and his overall position (between-ness centrality) in the community network. It also loads "community age" negatively (-.19) and some degree of "out-degree" but below the threshold. This factor most probably indicates those short term users who come to the community for specific purpose and wanted to put forward their point as much as possible by frequent posting and multiple forum visits. We label this factor explaining "*Active users*".

Factor 4 contains feature related to experience (high loading of community age=.729), high topic spread and forum focus. We label this factor as "*Experienced users*".

Factor 5 loads with tie strength and reputation score (NCQ=.618). Reputation score could not be loaded with PAF analysis may be because of its lack of linear correlation with other features except Age (figure 1), but its unique variance is captured by PCA and loaded as the 5th factor along with a moderate loading of community age (.339) and suggests a need for recognition and appreciation. We term this factor as "*Reputation/expert users*".

Table 1: Factor loadings using PCA

Principal Components Analysis					
PC1	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
In-degree	.924				
Out-degree	.864				
Post share	.901				
Initiation ratio		0.813			
Reply ratio		-0.994			
Self reply ratio		0.686			
PPM			0.800		
BetC			0.791		
Age				0.729	
Forum focus			0.420	0.630	
Topic				0.714	
Tie strength					0.614
NCQ					0.618

As an evaluative measure we computed Chronbach alpha (measures reliability and internal consistency of features as constituent elements of factors) of features, which ranges from .61 to .69 with an average of .63. The findings support the existence of motivation for interaction (factor 1), reputation (factor 5), helping (factor 2) and information seeking (factor 2), while factor 3 and 4 reflects user's activity pattern along with the experience dimension. The next logical goal is to study how these factors evolve over time.

4.3 Need Evolution

We recomputed the factor score as following for the evolution study:

- For factor 1 we took the mean score of "out-degree" and in-degree" as the engagement score (ENG).

- NCQ for reputation factor score

- Combined "initiation ratio" and "self-reply ratio" as the information need score (IN).
- Used "Reply ratio" as the helping need/altruism score /community contribution (CC).

We first examined the macro (community) level need evolution to understand what kind of needs are expressed collectively by users in different point of time and their intensity.

The first step in the temporal analysis is the construction of time segments covering the relevant time span (the time for which the data is available). To do this we divided the time period into equal time intervals (16 week each) starting from 2004 to 2010. The start of the first period (ti) would be the beginning of January 2004 to end of April 2004 (ti+16) and the second time period is from ti+16 to ti+32. Overall, this led to 22 time intervals. Each time segment contains the normalized factor score for each user for four factors.

4.3.1 Need Pattern Extraction

User needs are neither exclusive nor explicit, they appear in combination with other needs with varying degrees for e.g, users with high social interaction may also have a high score on community contribution. This motivated us to extract typical need patterns observed during the time interval t_i. Our approach to extract need patterns of a time interval considers the relative contribution of individual factor during the time period t_i – e.g. high information need, low helping need, low engagement.

Figure 5: Process of extracting needs patterns from user features.

Figure 5 shows an overview of how we extracted time based need patterns from the user features described above which led us to represent a user with a 22 x 4 feature vector. Next we took the feature score and discretized them by dividing the range into three intervals (1-3) of "high", "medium" and "low' levels. We also added two more levels (0,4) to represent 0% and 100% because of the nature of the feature computed (features reflecting ratios). The next step is to assign need pattern labels for each time interval corresponding to the feature levels:

IN=Low, CC=High, EN=Medium and Rep=Low -> Need pattern Label (1321)
IN=0, CC=1.0, EN=Medium and Rep=Low -> Need pattern Label (0421)

The last stage is the stage of *pattern pruning and categorical labeling*, where we investigated the pattern frequency. A simple frequency count led to 40 unique patterns (figure 6) with 20% of patterns covering 83% of the total distribution.

Clusters	IN	CC	REP	ENG
C1	M	M	L	L
C2	L	H	L	L
C3	L	H	H	M
C4	L	H	H	H
C5	M	M	M	L
C6	H	L	L	L
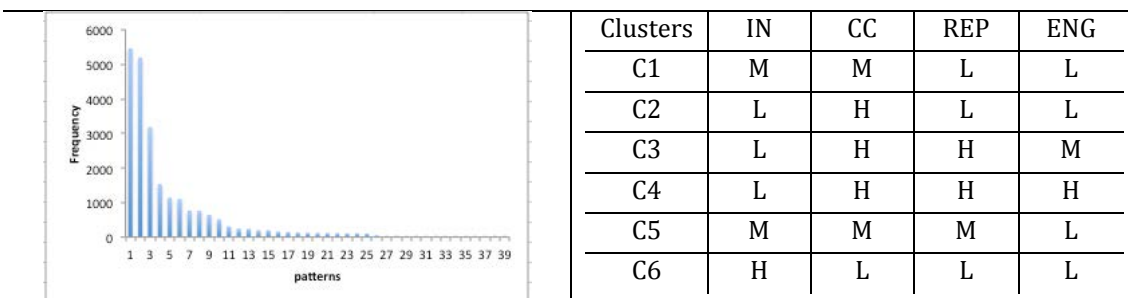
Figure 6: Frequency distribution of unique need patterns.

Table 2:shows 6 clusters with different levels of factor scores.

Initially derived 40 labels is a large number for any meaningful pattern analysis and will result in over-fitting the data hence we further moved to cluster these patterns in order to get a smaller subset by mean of k-means clustering. Clustering of data requires to estimate the number of clusters(k). We used average silhouette to estimate the number of clusters incrementally starting from 3 to 10 and recording the silhouette coefficient. We took the average silhouette of all the items and compared with different numbers of K={3…10}, final result showed K=6 with an average silhouette of .53. With 6 clusters, we created categorical label for each cluster depending on feature dimension:

1. **Information seeking and sharing (IR)**: user with balanced initiation and reply behavior, low in reputation and low-to medium in engagement.
2. **Information sharing (REP)**: Low information, high helping-low reputation, low engagement.
3. **Information Sharing and gain reputation (RR):** users with high reply behavior (100%), no initiation behavior, and medium to high reputation and medium to high engagement.
4. **Information sharing, gain reputation and community engagement (RRE)**: High contribution towards the community, high reputation and medium to high engagement.
5. **Information seeking, sharing and gain reputation (IRE):** users with medium initiation and contribution, medium to high reputation and low engagement.
6. **Information Seeking (IN)** users with this label are high on initiation, low on contribution towards other users, low engagement and low reputation.

The cluster output suggests the order of dominance is of 1,6,3,2,4 and cluster 5 and the need patterns of first 3 clusters (1,6, and 3) take approximately 70% of users time.

4.3.2 Need Evolution at the Community Level

Communities' activity trajectory reflects the collective needs of its user base. Figure 7 shows the community level need evolution over the time periods. We computed a cross entropy for each time interval to measure the fluctuation between different times with the following:

$$H(p, q) = - \sum_x p(x) \log q(x)$$

Cross entropy of each time interval shows the amount of fluctuation experienced by the community as a whole decreases with time leading towards a convergence. Indicating the importance of all different needs irrespective of user numbers and activity volume, thus stressing the requirement to examine the need trajectory at the user level and its evolution from initial to final stage.

Figure 7: Community level changes in different factor scores**.**

(1) Information Need	(2) Helping Need	(3) Reputation Point
Mean=.46, sd=.06	Mean=.52, sd=.06	Mean=1.98, sd=.24
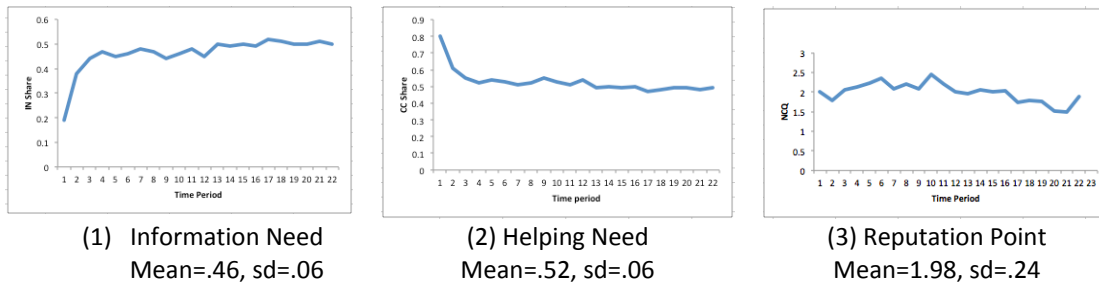
4.3.3 Need Evolution at the User Level

After joining the community, a user will attempt to address the reason for which he /she joined the community, for example, a user motivated to learn a new skill will start creating content within the forum by posting a questions, requesting for help. while if motivated by knowledge sharing, he will initiate his activities by commenting to the unresolved questions. Continuation in the community depends on satisfaction of his initial motivation, In case of continuation, a user most likely to be engaged in other community related activities requiring more time and effort. Rather than capturing individual user's need evolution, we are interested in the evolution of need patterns. However for the sake of the concreteness, we have illustrated one example of individual user. Figure 8 shows the changes in different need patterns starting from a simple cognitive oriented behavior pattern to community-focused behavior along with high reputation score and wider engagement.

The objective of this evolutionary study is three folds: (1) study the initial need patterns; (2) examine the ending need patterns and (3) the amount of difference observed in-between. Users follow 1 to 6 unique patterns during their life span with different degree of distribution with mean=2 (sd=.74). Distribution of unique need patterns shows that 21% of users are with single need pattern (of which IR takes 71% of the share followed by users with RR 13%) with a mean time interval of 3.36 whereas 51% exhibit 2 unique patterns during their community life span with a mean time interval of 4.36. A positive correlation(r=.43) between user's number of unique need patterns and the community age suggest community life span increases with multiple need satisfaction.

Initial Need Patterns: Ideally, each user should start their online community activities with the lower possible need on the stack, however analysis shows a different picture. Each user exhibits different need patterns when joining the community. Initial need pattern will reflect the initial motivation of a user to join the community. As shown (figure 9) in SAP dataset, 16% of users start with information seeking need (IN) while 51% to users participate interactively by both initiating and contributing to other users. 5% of users initiate their activity to help others or share their knowledge with a mean time interval of 5.38. Users (12%) starting with RR need patterns stay in the community on average 5.08 intervals but mostly focused on their current status of replying and getting reputation score (mean unique need patterns=1.8).

Ending Need Pattern: To investigate how users end their community life and how it differs from their initial stage, we selected those users whose last activity was recorded in 2009; assuming that a complete absence of 1 year from the community indicates either the user left the community or is very infrequent. Users last pattern distribution (Figure 9) shows a similar share with IR being the most frequent followed by IN and RR.
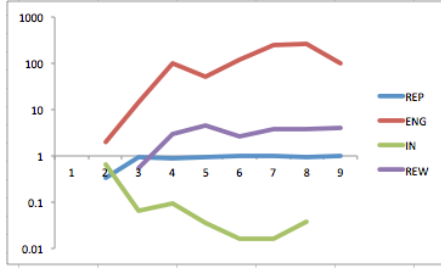
Figure 8: shows the progression of different need factors across 9 time intervals.
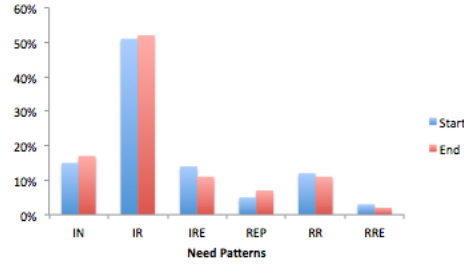
Figure 9: shows the distribution of various need patterns both at the initial (blue) and end stage(red) of user's community life.

Need Progression: In order to gain further insight into the progression process from the initial stage to the final stage, we computed a *need progression score* (NPS) for all the intervals of each user. In order to compute NPS, we need to rank the need patterns by means of their distribution frequency. Instead of individual ranking we grouped these patterns into lower and higher order needs based on their average frequency distribution in the data. As a result, IN, IR and IRE are in high frequency group (HFG) while RR, IRE and RRE come under the second group (LFG) because of their low frequency among the users. As in the information retrieval domain, where a high frequency word is considered less relevant while a low frequency word gets higher weight, we ranked the need patterns of high frequency group lower than the need patterns of low-frequency group. Hence a move into the high frequency group will yield a score of -1 while move into the low frequency group will get a score of +1. Following the ordering of need patterns, we computed the average need progression score of user $nps_m(u_j)$ as follows:

$$NPSm(u_j) = \sum_{i=1}^{N=ai(u_j)} nps_{ti}/N$$

where $nps(t_i)$ is the need progression score of the interval t_i computed in relation to the previous interval (t_{i-1}), $ai(u_j)$ is the total number of time intervals user *j* has in the community. For each user $j \in J$, we computed the absolute need progression score $(nps_a(u_j))$: is the directional difference of last $nps(t_n)$ from the initial $nps(t_i)$.

Analysis of the progression scores shows 46% of users maintain same order of needs during their entire community life while 25% moves from lower to higher order and 28% moves in the reverse direction (high to low). *This finding suggests that users do not follow a rigid hierarchy.*

5. Conclusion

We study the applicability of Abraham Maslow's motivation theory to understand the correlation between user behavior and needs in online Q&A communities. Unlike most previous studies, our work is mainly based on behavioural data logged in community systems. Our results suggest that online communities serve several needs of Maslow's framework such as need for social interaction and belongingness, need for recognition (reputation) and need for altruism. Moreover, knowledge centric communities show a strong tendency to

cognitive needs, which Maslow added to his stack in later years. Among the main findings, we observed that users differ in their association with various need patterns. Users with high reputation are more likely to stay longer with a community than users dominated by cognitive needs. However reputation seems to have less impact on content quantity as evident from both correlation and factor analysis. Socially motivated users create more content, and engage with other users more frequently compared to users motivated by other needs. Although the relation between need for self-actualisation and community participation is complex to model, we found a strong desire to help other members. Finally, needs are not found to be sequential or hierarchical as proposed in the theory, rather they seem to co-exist in different degrees and intensities at different point of time.

Limitations: Limitation of this study is two-fold (1) it entirely depends on system data hence validating the behaviour to need mapping is tricky and may vary with more data available, and (2) the domain of application is restricted to Q&A communities where participation is more controlled and hence many original motivations of participation may not be well reflected, like motivation to get attention or self-promotion or entertainment. In future work we plan to apply our analysis to other type of communities.

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Using and Creating Augmented Reality in Education

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Abstract: According to the 2012 New Media Consortium's Horizon Report 2012 K-12 Edition (Johnson, Adams, & Cummings, 2012) Augmented Reality is an emerging technology that will be adopted by educators within the next four to five years. From augmented reality applications used through mobile devices to the evolving development of Google Glass, augmented reality is becoming mainstream in social media and marketing; however, one of the most promising aspects of augmented reality is that it can be used for visual and highly interactive forms of learning. Combining the use of a camera, the Internet, rich media, and in some cases global positioning systems (GPS), augmented reality applications integrate the use of multiple technologies to create interactive and engaging media. Virtual imagery information is overlaid on top of real imagery as viewed by a camera (Lee, 2012). Mobile devices such as iPads, tablets, and smart phones, have provided a portable, affordable, and accessible medium for these technologies to converge, thus increasing the accessibility of augmented reality application use.Currently, augmented reality applications are used for social media and marketing purposes. An example includes a corporation sending out promotional postcards via postal mail. The postcard has a picture of a new car model. When the user installs a specific application on the mobile device and views the picture with the camera, the car comes to life through a video advertisement about the new model. There is much potential, however, for the use of augmented reality in both corporate and educational settings for teaching and learning purposes. New textbooks could have interactive elements requiring a student to download a mobile application to use in conjunction with the textbook. When the student encounters a picture or diagram, he or she can use a mobile device camera to view the picture. The mobile device then shows enhanced media in the form of overlaid graphics, video or other rich media, as well as perhaps, interactive hot spots or links to additional resources.
This paper will provide background information about augmented reality as well as discuss current uses of augmented reality, potential uses for education and training, as well as how to create augmented reality applications for education.

Keywords: Augmented Reality, Education, Social Media, New Technologies, Emerging Technologies

1. Introduction

Carmigniani, et al. (2011) defines Augmented Reality (AR) as "a real-time direct or indirect view of a physical real world environment that has been enhanced/augmented by adding virtual computer generated information to it" (p.1). In the early 1990's, Professor Thomas Caudell, first coined the term 'augmented reality,' while working for Boeing, referring to the head-mounted displays workers used to help guide them as they assembled electrical wiring in aircrafts. Today, AR media has become increasingly accessible with the use of mobile devices. With the convergence of the Internet, cameras, and software, mobile devices allow digital media to be overlaid on top of reality, augmenting or enhancing what is being seen through the device camera.

AR media can be triggered through the recognition of visual surroundings through the use of a camera. This data can also be triggered by location through use of the device's global positioning system (GPS) and accelerometer.   As a user views an image or his surroundings with a mobile device camera, the images are sent back to a database and triggers information to be sent back to the device in the form of an image, video, text, 3D models or animation. This information augments or enhances the current view as it is overlaid on top of the current visual.

2. Current Uses of Augmented Reality in Social Media

Most AR Media is currently viewed through mobile or smart devices. These devices are usually wireless and have access to the Internet. The user can download special software and allow the software to interact with and use the camera. They also have the GPS and accelerometers for location. AR Applications function to enhance user experiences in real life situations. For example, tourist applications will allow users to view their location through their device's camera while overlaying text and graphics identifying, distance to, and as well as information about identified landmarks. Examples of these types of tourist applications include *Augmented Reality France* and *In Sight – UK*. *In Sight – UK* will even identify the mountain peaks and lakes you see in front of you.

Other applications allow for integration of social media and reviews. *Tagwhat* brings together information from open sources such as Wikipedia, crowdsourcing, partnerships, and social media to show you content based on your location as viewed through your mobile device. In addition, users can set their devices to notify them when something interesting is happening nearby. These notifications are triggered by their location (Tagwhat, Inc. 2014). Users can then share updates and "tag" friends from within the application with the integration of other social media such as Facebook and Twitter.

Google Goggles is a virtual search engine that allows the user to view anything, such as a picture, a painting, a sign, a barcode, or a popular image, through the device camera. If there is information in the Google database, it will return that information to the device. Google can also read text in several different languages so that it can be used in various countries all over the world.

Google is also working on a new mobile device, which focuses on augmenting reality as one of its main functions. The device will be able to give the user functions in a real-time data available through a mobile such as time, location, and weather, but also function as a camera, video camera, and GPS device. *Google Glass* allows a user to view his or her surroundings through a glasses, or spectacle-like, viewing device. Based on location, image data, or spoken words being streamed back to Google's databases, information about a landmark, location, object, will be returned to the device and overlaid on top of the user's visual interface (Bilton, 2011). As of the writing of this paper, Google was accepting users to serve as "Explorers" to test the device and shape the future of Google Glass (Google 2014).

Other AR media applications give have given new life to print media. *Layar* also allows you to find information about a location through the viewfinder of your mobile device camera, including nearby Tweets. However, the AR media application also enables print media to become more interactive. By viewing *Layar* enabled images in magazines or other print media, these media are animated, or "come to life" (DeepKnowHow 2014).

Similar to *Layar*, *Aurasma* allows the possibility for every image, object, or place to trigger and augmented reality in the form of text, images, video, or 3D animation. *Aurasma*, however, has a way for users to create their own "Aura's" or augmented reality media and share with other users (Aurasma 2014).

3. Potential for Augmented Reality in Education

In 2010, the United States Department of Education's National Educational Technology Plan called for the education system to: 'leverage the learning sciences and modern technology to create engaging, relevant, and personalized learning experiences for all learners that mirror students' daily lives and the reality of their futures' (U.S. Department of Education 2010, p. 8).

Whether the domain is English language arts, mathematics, sciences, social studies, history, art, or music, 21st-century competencies and such expertise as critical thinking, complex problem solving, collaboration, and multimedia communication should be woven into all content areas. These competencies are necessary to become expert learners, which we all must be if we are to adapt to our rapidly changing world over the course of our lives (U.S. Department of Education 2010, p. 9).

According to Wasko (2013, p. 21), many recently developed AR enhanced learning environments promote critical thinking, problem solving and collaboration. AR enhanced learning environments distinguish themselves from virtual reality by allowing the user to experience an augmented form of the real world rather than exploring a virtual world through a computer (Wasko 2013). Through AR, students have a more authentic experience with the sights, sounds, and smells of the physical world (Klopfer 2008).

AR applications allow students to actively construct new knowledge based on interactions with virtual objects that bring new data to life based on user input. AR facilitates the ability for a student to transfer learning from one context to another (Johnson et al. 2012). The use of mobile devices to facilitate the use of AR technology allows for both formal and informal learning. In fact, being able to use the mobile devices for "just-in-time learning" is another advantage for using AR technology. Researchers (Dunleavy et al. 2009, Squire & Jan 2007, Squire & Jenkins 2007) have reported increased motivation, increased feelings of collaboration, role-playing, and the ability to see multiple perspectives as learning outcomes.

4. Current Uses of Augmented Reality in Education

Mobile phones provide the most potential for use of AR media applications due to the GPS and accelerometer features. However, with the use of mobile devices such as iPod Touches, iPads or other tablets, and free downloadable applications, AR technology is an accessible technology for today's classrooms. With these devices, several downloadable applications can be used without very much teacher training.

Google Sky Map is a free application that allows users to view the hold their device in any direction at the sky and view the stars, planets, and constellations. This astronomy application provides information about the various elements of the night sky as the user views it.

FETCH! Lunch Rush helps students practice elementary mathematical skills in a lunch and scavenger scenario. The instructor facilitates the activity by placing pictures in various places. The pictures represent a number. In groups, students try to figure out lunch orders, or solve equations, through the application. Once the students solve the equation, they must find the picture with the correct answer. Holding the camera over the picture allows them to check the number and submit the lunch order, or correct answer.

Another application used for an older audience, is *Anatomy 4D*. *Anatomy 4D* is an application that triggers a 3D model of the human body from an image. After the 3D model appears, the user can manipulate it by dragging his or her finger across the screen. The application also allows the user to toggle layers of the human body such as the muscles, venous structure, and bone structure. This extra layering is the fourth dimension in the "4D" of the application title. *Anatomy 4D* allows the user to explore the human body's systems and their interrelationships spatially. In the past, this exploration has only been available and accessible through a gross anatomy laboratory (Daqri 2014).

Museums have also started using AR to bring more interactive elements to exhibits. *Magnetic Maps* is an AR application that allows users to manipulate bar magnets in real time. The users could see the augmented magnets with the visually represented magnetic fields through the computer screen. In a study using *Magnetic Maps*, Yoon and Wang (2014 p 53) discovered the AR technology engaged the students more as they experimented with the magnetic fields to see how they reacted to their physical manipulations.

5. Creating Augmented Reality Applications for Education

Like other new technologies as AR technology has emerged, the cost of hardware and software resources, was an obstacle to its use in education. However, recently easy-to-use, general purpose design and development platforms, along with increasing widespread use of mobile devices within education, has enabled the number of people experimenting with AR design and development (Holden 2014). Many of these development platforms are available at a free or low cost.

ARToolKit is a software library for building AR applications. This toolkit requires programming experience and is C and C++ based. The applications built with this software library make use of computers and cameras. Although it is not made for a non-programmer, this library can serve as the foundation for more complex designs of AR media (ARToolworks, Inc. n.d.).
FreshAIR is an AR application through which users can view the world, revealing hidden stories and "Realities" created by others. The *FreshAiR Editor* is a powerful web application and authoring tool that allows anyone to easily and quickly create their own custom "Realities" without writing a single line of code (FreshAir 2014).

Aurasma (http://www.aurasma.com/aura/), *Layar* (https://www.layar.com/developers/), *Junaio* (http://www.junaio.com/develop/) are web-based AR development platforms. Users sign up to become developers and through a web-interface create AR objects. Creating these objects are as easy as uploading an image that serves as a trigger and indicating what that image will trigger. For example, an image of a logo could trigger a video introduction of the logo's organization. An image of a location could trigger a 3D animation of the history of the location or landmark. These types of development platforms are fairly easy to use.

AR-Media Plug-in for Google Sketch-Up
(http://www.inglobetechnologies.com/en/new_products/arplugin_su/info.php) is software used in conjunction with Google's 3D modeling development software. Once a 3D Model is developed in Google

Sketch-Up, the user can export it through the *AR-Media Plug-in*. Using the *AR-Media* software, developers can trigger a 3D model to manipulate it three dimensionally as well as add or remove layers of the 3D model.

6. Conclusion

AR applications have been adopted and are readily being used in social media and marketing, but still have potential for impact in education. The awareness and adoption of AR applications for use in education is increasing, and there is still much to be learned about the benefits AR enhanced environments can have on learning. The availability of non-programming user friendly development platforms has also made it possible for practitioners to start designing AR applications for their students to use, or even have their students design and develop AR media. Use and development of new AR media will allow more research to be conducted on the different ways the use of AR media influences student motivation for learning, as well as how AR influences student interaction and engagement with educational content.

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IT Based Communication in Professional Service Firms: the Long and Winding Road.

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Abstract: Purpose: The purpose of this paper is to investigate the development of marketing practices toward the online context in professional service firms (PSFs). PSFs' new marketing practices are not well understood, despite their increasing importance to economies worldwide and recognition of their unique characteristics and the marketing challenges they face, particularly related to internet-based tools, such as social media. The aims of this article are: a) Do professional service firms adopt e-marketing practices, particularly innovative tools (e.g. social media)? b) If yes, how these tools can create value for these firms (e.g. helping firm to attract new customers, improving internal/external communication, etc.)? c) Are there any relationships between the intention to adopt or to better develop e-marketing tools and the potential increase of value perceived by firms? .**Method:** Empirical data were collected from 1406 professional service providers through a nationwide survey particularly related to the accounting consultancy industry. Data analysis was conducted through descriptive statistics and a regression model. **Findings:** Results showed traditional marketing tools were still the most common professional service providers' marketing practices. Relating to e-marketing practices, most of the firms declared to have a website while very few of them used at least a social network for professional purposes. Not only actual but also the future intention to adopt or to improve innovative e-marketing tools have been investigated. Results highlighted a positive relationship between the likelihood to adopt/improve the adoption of social media and the related increase of value perceived by firms. **Research Limitations/Implications:** This study focuses on a specific industry in only one country. There is the need to replicate the study in other countries or professional services, for instance banking, financial services, etc. **Originality:** The results presented in the paper have important implications for researchers when modelling marketing practices and for professional service managers when undertaking marketing activities. Innovative e-marketing practices literature was investigated and enriched, exploring the impact of e-marketing tools on firm's value perception.

Keywords: Professional services, Marketing practices, E-marketing, online marketing, social media, service marketing, accounting firms

1. Introduction

Professional service firms context has been developing in the last decade, where new customer needs have arisen and there has been an important call for new capabilities and know-how for professionals service firms (Wessel 2004). Two are the main drivers that have forced these changes: the advent of Information and Communication Technologies and the recent regulation, about communication and advertising for professionals services of several countries (accountants and law firms) (Olivier 2000).

The purpose of this article is to investigate whether innovative communication tools, particularly E-marketing practises, can contribute to create value for PFSs. This value can be measured in terms of helping firm to attract new customers, improving internal/external communication, etc.. The paper is structured as follows: a systematic literature review about marketing and e-marketing tools will be provided, as well as a "research method" session, data analysis and conclusion.

2. Literature background

2.1 Previous research on marketing practices

Market orientation is considered a business culture that facilitates firms in achieving sustainable competitive advantage by creating superior customer value (Narver and Slater 1990). Another reason making market orientation important is its relationship with business performance (Tsioutsou and Vlachopoulou 2011).

Research reports either a direct positive relationship (Avlonitis and Gounaris 1997; Deshpande and Farley 1998; Langerak 2002), or indirect influences (Han et al., 1998; Agarwal et al., 2003), or no effects (Greenly 1995) between the two constructs.

However, firms not only need to be market oriented but they should develop and reinforce a set of marketing practices helping them to get related to their markets (Brodie et al. 2008; Coviello et al. 2002). Previous research by Coviello, Brodie, and Munro (1997) and Coviello et al. (2003) explicitly adopted the term "marketing practices" to refer to broad notions of transactional marketing and relational marketing.

Transactional marketing involves achieving customer satisfaction by managing the traditional marketing mix, implying one-way communication from sellers to buyers.

Relational marketing embraces practices around ongoing company and buyer relationships and may entail database marketing, e-marketing, interaction marketing, and/or network marketing (Dibb, Simoes and Wensley 2013).

Few studies have empirically investigated how firms practice marketing beyond the relationship marketing "catch-all" concept. Coviello et al. (1997), Brodie et al. (2007) and Sweeney et al. (2011) are an exception as they developed a marketing practices classification from a review of the relationship and management literatures, namely:

- transaction marketing (managing the marketing mix to attract and satisfy customers);

- network marketing (developing interfirm relationships to coordinate activities among multiple parties for mutual benefit);

- interaction marketing (face-to-face interpersonal interactions within relationships to create cooperative interactions between buyers and sellers for mutual benefit);

- database marketing (technology-based tools to target and retain customers);

- E-marketing (using the internet and other interactive technologies to create and mediate dialogue between the firm and identified customers).

The research by Coviello and her colleagues has shown that, in practice, many service firms are still focused on a transactional, rather than a relational approach, which is surprising given these firms are inherently service oriented and are "expected to emphasise relational marketing in terms of their decisions and actions regarding the market"(Coviello et al. 2006, p. 39).

However, it is also well known that managers are starting to place an increased emphasis on managing their relationships, networks, and interactions, with a range of internal and external stakeholders, and not just customers (Lindgreen et al. 2004). There is a growing realization that successful marketing encompasses both internal and external customers and community stakeholders, and this is particularly true ofr those professions, where "professionals must be able to create and sustain relationships, pitch for new business and sell specific services, as well as deliver both process and outcome quality to their clients" (Reid et al. 2008).

2.2 A Research Focus On E-Marketing for Professional Purposes

Based on the previous classification of marketing practices, a topic that has recently attracted the interest of academics is the implementation of e-marketing practices, thanks to the advent of Internet and more recently, social media. Firms use the Internet as the main vehicle for adopting e-marketing to develop value chain efficiencies, to reduce costs, to gain positive word-of-mouth promotion, to enhance customer (Anderson and Srinivasan 2003; Rust and Espinoza 2006) and channel relationships (Sultan and Rohm 2004) and to gain competitive advantage (Day and Bens 2005). Empirical evidence suggests that the use of the Internet to perform transactional activities, such as ordering, selling, and payment is positively associated with increasing business performance (Drennan and McColl-Kennedy 2003).

E-marketing relies on technology to enable interactivity, and thus differs from other marketing practices, by providing customers access to information while the use of interactive technologies allows these customers to provide information to the business (Brodie et al. 2007).

E-Marketing capability represents a firm's competence in using the Internet and other information technologies to facilitate rich interactions with customers. These interactions provide customers with access to firm resources and information while simultaneously providing the firm information about its customers (Trainor et al. 2011).

Consistent with Brodie et al.'s (2007) definition, e-Marketing technologies extend beyond Internet-based advertising and communications to include technologies supporting several marketing functions such as customer relationship management, sales activity, customer support, marketing research and planning (Brady, Saren & Tzokas 2002).

Despite the increased interest in e-marketing, there is limited data in the literature explaining its link to business performance (Tsioutsou and Vlachopoulou 2011).

Wuet al. (2003) studied four types of technology-based industries in the USA and reported a positive effect of e-business intensity on firm performance expressed as sales performance, customer satisfaction, and relationship development. Recently, Ordanini and Rubera (2007) reported that internet resources exhibit an indirect effect on performance mediated by customer orientation. Brodie et al. (2007) found that the adoption of e-marketing is positively associated with marketing performance and specifically on customer acquisition and retention.

Beyond traditional e-marketing tools, like the company web site, today's firms should embrace the most innovative e-tools that allows interactivity among consumers and help to improve companies' relational marketing. In this sense, social media should be useful for three reasons. First, they provide a low-cost platform on which to build the brand, communicating who you are both within and outside your company. Second, they allow engaging rapidly and simultaneously with peers, employees, customers, and the broader public, especially younger generations, in the same transparent and direct way they expect from everyone in their lives. Third, they provide an opportunity to learn from instant information and unvarnished feedback. "Active participation in social media can be a powerful tool—the difference between leading effectively and ineffectively, and between advancing and faltering in the pursuit of companies' goals" (Dutta 2010).

Professional Service Firms (PSFs) are organizations that deliver professional services, including accounting, law, and management consulting firms. According to Sweeney et al. (2011) "…PSFs are not only growing in terms of their contribution to GDP, but also in terms of employment" providing a wide range of customize "knowledge-based" services. For instance large law firms broker complex commercial activities and help establish and then interpret the rules of the game of the capital market system. Consulting firms are carriers of ideas about management and influence how corporations are managed. Accounting firms underpin the integrity of the financial markets (Greenwood et al. 2007). Sharma (1997: 758) affirms that without professional service firms "business as we know it would come to a grinding halt". PSFs are knowledge-intensive firms, where "most work can be said to be of an intellectual nature and where well-educated, qualified employees form the major part of the workforce". According to the classification of Alvesson (2000) PSFs can be described as 'pure' knowledge firms that deliver intangible services customized for each client.

In other words PSFs, are distinguished by their customization of knowledge to meet client circumstances and their highly educated workforce.

These pure knowledge firms should focus on competency of practice, as well as extent of practice such as new communication and marketing ones. However, not all professional service providers do this (Sweeney et al. 2011).

Despite several studies (Elfrink et al. 1997; Clikeman et all 1998, Koski et al. 2001) have shown the positive impact of the use of new marketing and communication practices on firm performance, such as corporate imagine, improved client retention rate, improved perception of service quality etc. However, the use of e-communication and e-marketing policies remains underutilized by several PSFs (Sweeney et al.2011).

3. Research method

3.1 Data collection

In order to answer to our research goals, we adopted a mix method. First, we utilized the qualitative methodology through a field case study to analyze the data (Creswell 2007). This enables the phenomenon to be explored in its natural state (Yin 2009).

In doing so, we considered a specific PSF company , a large accounting and law consultancy firm called in this study "Alfa", which is based in Italy. We chose this company in order to investigate professionals' perceptions during the company's analysis and process reengineering of its new communication processes.

The case study was conducted according to the guidelines of Yin (2009); hence, information was collected through semi-structured interviews, direct observation and documentation analysis, while the test sources consisted of interviews and internal documentation.

Privileged access to the information facilitated the gathering of data from several sources, thus increasing the quality of the information obtained (Benbasat 1984).

The case analysis involved 12 semi-structured interviews of approximately 40 minutes each in the firm Alfa with both researchers in attendance and used the protocol presented by Arksey and Knight (1999; pp.74-75). The interviews were conducted with three charter members (1 from law area and 2 from fiscal/management area), five senior consultants (3 tax/management consultants and 2 law officers), three junior consultants (2 law officers and 1 tax/management consultants), and one accountant trainee. In addition, we decided to use some internal documents such as: internal communication planning, external communication planning, change management planning, etc. The semi-structured interview consisted of 14 questions.

The material gathered was examined using hermeneutical analysis (Bryman and Bell 2011) supported by qualitative research software, CAQDAS (Miles and Huberman 1994), run in parallel by two researchers (Morse et al. 2002). The results thus arrived at independently were discussed and screened in meetings held by the researchers involved in the analysis procedures in order to refine and improve the coding process (open, axial and selective code) and memoing (Strauss and Corbin 1990), but also to ensure the rigour of the research by removing any potential interpretive bias (Morse et al. 2002). A work of aggregation, refining and revision (axial and selective coding) was used to identify and denominate the codes according to whether the new Web 2.0 tools had a positive or negative impact on the work routines, as reported by the principle case informants. A total of 25 open codes were initially identified, which were then whittled down to 12 axial codes (i.e. strategic role of ICT, strategy role of social networks, traditional communication, etc.) after discussion in internal research team meetings and the outcomes of the focus groups. Some of the open codes were aggregated because explicative of the same construct, while others deemed insignificant and not endorsed by the key informants were eliminated.

These codes were used to create the questions in the second study through a survey. The main survey was composed of three sections with thirty-four questions. In the first section, there were twelve questions that analysed the firms' demographic information (number of employees, establishment year, locations, activities and services provided to customer, role and age of the interviewed, gender, number of branches, etc.). In the second part, authors tried to understand the communication tools used in the accounting and law consultancy industry in order to increase firm's visibility and enhance their business value. At the end, we analyzed if the ICT and in particular Web 2.0 tools (i.e. social media, etc.) would be implemented or developed in the near future and whether these represent a strategic tools for business value creation (these two outcomes were measured from 0= completely disagree, to 100= completely agree). Most of the questions were a Likert-type attitudinal sort, and the values ranged from 1 (completely disagree) to 5 (completely agree).

During the annual conference of accounting consultants in Italy, the survey was addressed through self-administration method (Oppenheim, 2005) to a total sample of 5000 firms. A sample of 1406 firms answered to the survey, reaching 30% of the redemption rate. Only completed questionnaires were considered for data analysis (n=892). Data collection started in November 2012 and ended roughly eight months later. The existing data was elaborated and integrated starting late March 2013.

In order to analyze all these data, we used the statistical software SPSS.

In order to assess reliability, we used two different methods. First of all, the Internal Consistencies were assessed. The value of Normalized Cronbach's alpha was of 0.841: therefore, much better than the minimum value of 0.7 suggested by Cortina (1993). The value of Cronbach's alpha for each of items was also examined, in order to check whether the exclusion of any items could improve the overall Alpha. But the data revealed aligned. Then, the F value was 601,037 (degrees of freedom, d.f.=15), with a significant index of ($\rho<0.001$).

In order to verify our research questions, we used the following items as independent variables:

Table 1. Items adopted for the regression analysis

Items
Actual Private use of Social Media (yes/no, 1/0)
Actual Social Media adoption for communication (yes/no, 1/0)
Importance of Social Media for doing business (from 1= completely disagree, to 5= completely agree)
Actual Professional use of Social Media (from 1= completely disagree, to 5= completely agree)
Importance of Social Media for increasing business visibility (from 1= completely disagree, to 5= completely agree)
Role of Social Media in providing/sharing information to customers (from 1= completely disagree, to 5= completely agree)
Contribution of Social Media to the increase of the effect of traditional word of mouth (from 1= completely disagree, to 5= completely agree)
Role of Social Media to attract new customers (from 1= completely disagree, to 5= completely agree)
Social Media seen as a distraction for employees (from 1= completely disagree, to 5= completely agree)

4. Data Analysis and results

4.1 Descriptive statistics

The respondents belonged to the same professional services industry, that is the accounting industry in Italy. In terms of gender, almost all of the interviewed people were men (61.1%) whilst only 38.9% are women. The average age was 45.98 (St. Dev.=9.705). In particular, we obtained the following categories: under 35 years old (11.9%), 35-44 (33.8%), 45-54 (35.7%), 55-64 (14.8%) and over 64 (3.8%). The majority of them are expert consultants who have been working in that role for more than five years (89%) and the 7.1% has between 1 and 5 years of seniority, while only 0.4% has been in today's office for less than one year. The respondents are: charter members (78.5%), accountant trainee (9.3), executive assistant (4.1%), senior consultant (2.8%), junior consultant (1.6%), and other (3.7%).

57.5% of respondents described his or her company as having less than 5 employees, 30.6% between 5 and 10 employees, 6.2% between 11 and 15, and finally the 5.5% are considered large accounting firms with more than 15 employees (mean=6.22 employees and St. Dev.=12.02).

In these firms, the communication tools used were: traditional word of mouth (66.6%), Web site (5.3%), and only 3.2% of them utilized social media. The 91.1% of our sample did not have a professional account on a social network and the 43.1% of respondents think that social media could be, in the near future, useful tools for communication. However, on a scale from 0 (totally disagree) to 100 (totally agree), the belief that a future implementation/improvement of these e-marketing tools will allow their companies to increase their business value has been evaluated on average of 28.58 .

4.2 Regression Analysis

Data were analyzed by examining two main regressions in order to understand whether accounting consultancy firms would adopt or better develop e-marketing tools, particularly social media for professional purposes (regression A) and if this adoption would increase the value perceived by firms (regression B).
In regression A, we included nine independent variables (see table 1) considering their impact on the following dependent variable: the intention to adopt or to develop e-marketing tools, particularly social media for professional purposes (from 0=totally disagree to 100= totally agree). The R-square value was 0.679, F value 192.695 with 9 degrees of freedom ($p<0,001$).

Table 2. Impact of social media benefits on future social media implementation/development for professional purposes (Regression A)

Dependent Variables	Sig. (ρ)	VIF	Results
Private use	0.133	1.077	not significant
Social Media adoption for communication	0.045	1.226	significant
Social Media for doing business	0.020	1.675	significant
Professional use	0.859	1.280	not significant
Increasing business visibility	0.002	2.051	significant
Providing/sharing information to customers	0.032	2.171	significant
Increasing of the effect of traditional word of mouth	0.010	2.337	significant
Attracting new customers	0.158	2.770	not significant
Distraction for employees (reverse)	0.642	1.047	not significant
Increasing the value perceived by firms	0.000	1.343	significant

Moreover, the VIF values were less than 4. According Belsey et al. (2004) these values there were no multicollinearity interchangeably among the independent variables. In the table 2, we summarize the first regression model, where we also added the other dependent variable, the value increase through social media adoption, as independent variable (from 0= totally disagree, to 100= totally agree).

We found positive and significant results about the following variables: Social media adoption for communication purposes by respondents, the usefulness of Social Media for business, the importance of Social Media for increasing business visibility, the importance of Social Media for providing/sharing information to customers, the usefulness of Social Media to increase the effect of traditional word of mouth, and to increase of business value. This means that respondents who provided a high level of agreement with these items will be more likely to develop or improve their future social media adoption. On the other hand, there were no statistical relationships with these items: the actual Private use of Social Media, the actual Professional use of Social Media, the importance of Social Media to attract new customers, and Social Media seen as a distraction for employees.

Table 3. Impact of social media benefits on potential business value perceived by PSFs (Regression B)

Dependent Variables	Sig. (ρ)	VIF	Result
Private use	0.126	1.075	not significant
Social Media adoption for communication	0.589	1.226	not significant
Social Media for doing business	0.000	1.621	significant
Professional use	0.035	1.276	significant
Increasing business visibility	0.542	3.056	not significant
Providing/sharing information to customers	0.018	2.696	significant
Increasing of the effect of traditional word of mouth	0.029	2.329	significant
Attracting new customers	0.000	2.727	significant
Distraction for employees (reverse)	0.022	1.043	significant

In Regression B (see Table 3), authors verified the impact of the same independent variables on the following dependent variable: the perception of an increase of business value derived from social media implementation/development (from 0= totally disagree to 100= totally agree). The R-square value was 0.574, F value 92.69 with 8 degrees of freedom ($\rho<0.001$). Moreover, the VIF values were less than 4.

We found positive and significant relationships about the following variables: Social Media are useful for doing business, the actual Professional use of Social Media, the importance that Social Media for providing/sharing information to customers, the usefulness of Social Media for increasing the effect of traditional word of mouth, the usefulness of Social Media for attracting new customers, and Social Media perceived as a distraction for employees (as it was a reverse question, results show that there is a positive relationship between the perception that social media are not a distraction for employees and the likelihood to implement/develop social media for professional purposes). There were not significant results about: Actual private use of social media, the actual Social Media adoption for communication and the adoption of Social Media for increasing business visibility.

5. Conclusion, Limitation and Future Research

The purpose of this paper was to investigate the development of marketing practices toward the online context and in particular the level of adoption of social media in professional service firms (PSFs). As results showed, these firms mostly adopt traditional marketing tools (word of mouth) and very few use e-marketing tools (social media). In addition, only few companies intend to develop their social media usage and fewer think that this adoption will provide an increase of their business value.

However, for those who confirmed that they will increase the usage of e-marketing tools there are several benefits that are mainly linked to this intention to improve these tools. Particularly, those professionals who agreed that social media are important for enhance their business visibility and they are helpful for information sharing with customers were more likely to foresee an incremental usage of social media, integrating their traditional communication tools, such as word of mouth. This implementation or improvement will lead to provide more business value for PSFs as confirmed in our study. On the other hand, for those respondents who perceived an increasing in their business value through the adoption of social media, they were likely to assign importance to benefits related to new customers acquisition beyond the professional image enhancement.

Our study contributes to better understand PSFs' new marketing practises, particularly related to those utilized by accounting firms. This was realized through a nationwide survey that involved almost 2.000 firms and provides a useful contribution to enrich the actual literature about marketing practices of PSFs, particularly related to social media adoption for professional purposes and the benefits and value that this implementation provides to professionals.

Although providing the benefits of controlling for industry effects, a single industry approach has certain limitations in terms of the generalizability of the findings due to the uniqueness of an industry's environment. Furthermore, additional factors that influence e-marketing should be examined in order to explain more of its variation. For instance a better investigation of technological orientation, international activity, and innovation are only a few that their role should be examined in future investigations.

Future research could also compare the perception of e-marketing tools practices with the most traditional ones.

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Social Media and Open Innovation – a Systemic Approach to Commercialisation of Socio-economic Solutions

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Abstract: This experimental case describes an example of a public-private partnership (PPP) to develop a collaborative model for open innovation using social media, with the purpose of addressing socio-economic challenges in the context of a developing country. Open innovation postulates the notion that ownership of processes should be acquired from other enterprises that can afford such levels of research investment, as well as utilising licensing and joint ventures to commercialise internally-generated innovations. However, this multiple channel process is often fraught with mistrust and lack of commitment amongst the participants.This project proposes a systemic model that optimises innovation through social media and minimizes conflict in the commercialisation of open innovation. Although PPP is a fairly common and advocated approach to challenge complex socio-economic challenges, using social media adds to the complexity of dealing with intellectual property (IP) and/or commercial rights. In an experimental process entitled "CodeJam 2013", PPP stakeholders (representing business, government, communities and academia) co-designed a collaborative process to develop and commercialise solutions for specific socio-economic challenges. Ascribing to the notion of open innovation, social media was used as the primary source of ideation. The premise for this experiment was that CodeJam 2013 could provide a safe, commercially non-threatening environment in which competitive and concurrent stakeholders could co-design optimum innovative solutions in collaboration with external (social media) and internal ideators, with the ultimate objective of establishing new paths to the market, i.e. commercialisation. This process consisted of two distinct phases, namely a defined, neutral and shared intellectual property realm referred to as the co-creation phase, followed by a demarcated incubation phase during which partners negotiated for product development (and thus commercial/IP rights). From the perspective of business (as a PPP partner/stakeholder) a number of outcomes related to the use of social media for open innovation have been identified, inter alia: limiting business risks typically associated with open innovation; the agreed "safe space" promoted optimal innovation as a result of reduced focus on IP rights; radical transgression of internal business boundaries as a benefit from "out"ternships; benefits for external ideators through learning that occurs as a result of intimate business engagement; realisation that problem complexity can be minimised through team participation; the diffusion of the innovation process across PPP boundaries; introducing the essence of "warm bodies" in the clinical processes of open innovation with social media; successful open innovation based on social media is reliant upon extensive co-creative collaboration, networking and shared responsibility from all stakeholders. In essence, this systemic approach to open innovation based on social media proved to be a viable model and alternative for the development and commercialisation of socio-economic solutions.

Keywords: Open innovation, social media, public-private partnerships, intellectual property, socio-economic challenges, commercialisation.

1. Background

1.1 Historical development

South Africa is lagging behind with respect to the level of digital competence of e-Readiness. According to the 2012 WEF Networked Readiness report of 142 countries, South Africa is at the 72nd place and not yet leveraging the potential benefits offered by ICT. This has serious implications for the country's ability to remain competitive within the global knowledge economy and to capitalise on the advantages posed by the digital economy. Given the fact that South Africa follows the same "mobile and social media first" ICT development trajectory as other developing countries (Dutta & Bilbao-Osorio, 2012), various stakeholders representing government, business, academia and the community agreed to form a collaborative PPP to develop skills and capacity in the area of social innovation leveraging off social media and mobile technologies.

As change-makers (Phills, Deiglmeier & Miller, 2008) the PPP agreed to co-design a new model, in an experimental manner, to address socio-economic challenges. The main principles that guided the process were shared ownership and shared responsibility based on relationships of trust.

2. Purpose of this paper

The purpose of this paper is to present a systemic model of work-in-progress that optimises innovation through social media and to report on the outcomes that minimizes conflict in the commercialisation of open innovation. Based on the work of Altman, Nagle and Tushman (2013) the innovation process observed and described here impacts on organisational openness, user innovation, community engagement, social media, all which have implications for organisations.

We propose a novel and systemic approach, as postulated by Sautet (2013) for open innovation in business (based on social media) to address socio-economic challenges. Our approach seeks to incorporate the structure of systemic processes (Visser & Craffert, 2013) in the context of a developing country, not only to generate interest in and support for the acquisition of digital knowledge, skills and competencies, but also that it may present opportunities for, *inter alia*, learning, experimentation, wealth creation, employment in a developer ecosystem.

The envisaged approach to a systemic model aims to follow a process almost diagonally opposed to the traditional methodology of developing solutions to challenges. A key initiative of the mentioned PPP is to leverage social innovation and human skills development off mobile technology and social media. Mitra and Abubakar (2011) refer to such initiatives as processes of "capacity creation", not only in the context of development and growth, but also in moving from levels of low to high productivity, the creation and adoption of new goods and services, developing new skills and creating new knowledge. In a South African context, the approach envisaged in this experiment is (in all probability) the first manifestation of a redirection of resources into human development.

The democratic nature of social media allows for the maximisation of idea generation and solution development as it accommodates cross-boundary interaction and collaboration of (internal and external) ideators in a non-threatening and commercially-safe environment. In this model, innovation precedes the negotiation of commercial rights. In other words, a developer ecosystem (Altman, Nagle & Tushman, 2012) acts as a framework in which an impartial environment is created wherein PPP stakeholders, including competing business organisations, create products/solutions that clients (and communities) may acquire through the marketplace (to address socio-economic challenges).

3. Literature review

Our proposed model (see Figure 1, section 4.2) builds on a diverse selection of topics from literature, including open innovation theory, public private partnerships (PPP), ownership and IP rights within innovation processes, and the use of social media and crowdsourcing as vehicles for co-operative innovation.

Open Innovation and PPP (Steps A-E of our model): Innovation processes are enhanced by the co-operation of competing stakeholders; co-opetition (Mention, 2011). Such co-operation, for the purpose of mutual commercial benefit, requires both public and private stakeholders to step outside traditional ownership boundaries (Altman, Nagle & Tushman, 2013). Open innovation theory, as postulated by Chesbrough, Vanhaverbeke and West (2008), allows for such public-private co-operation – including various levels of community engagement, but limits the usefulness of such arrangements to instances that draws innovation into the research and development processes of a large firm(s) – referred to as inbound open innovation (Dahlander & Gann, 2010). Examples of such inbound open innovation processes include the crowdsourcing of innovative solutions through ideas competitions, which results in a novelty driven competitive advantage for the co-operating stakeholders (Leimeister et al, 2009).

The problematic assumption underpinning co-operative inbound open innovation is that participating stakeholders will share (be able to contract on) the ownership of any resulting intellectual property (IP) product, or process (see Altman, Nagle & Tushman, 2013). As new fields of study, the relationships between: (i) ownership-related friction, (ii) the level of community engagement within innovation processes, and (iii)

innovation processes targeted towards solving socio-economic problems have not been adequately addressed in literature.

Altman, Nagle and Tushman (2013) contend that a lack of clarity regarding IP laws and the effect of IP laws on ownership boundaries may have a negative impact on co-operative open innovation. Several IP researchers share concerns regarding the complexity of IP laws within multi-stakeholder processes that extend beyond the boundaries of the firm, as opposed to traditional shareholder ownership, as argued by Klein et al (2012). The traditional view of open innovation, as being inbound and governed by ownership agreements, is reviewed in this article (see the descriptions of Steps A-D of our model in section 4.2).

Ownership conflict within open innovation processes: Moving closer to our model for minimizing conflict during open innovation and the commercialisation of socio-economic solutions, we note that a further cause of conflict within such PPP relationships is the tension between the various agendas (i.e. the internal strategies) of stakeholders. Drnevich and Croson (2013) observe that as stakeholders struggle internally to embed technology driven innovation as a strategy within their business models, whereas Wang, Yeung, and Zhang (2011) state that innovation processes within organizational boundaries are often deflated by issues of trust and ownership. Moreover, when stepping outside organizational boundaries into an open innovation space (see Steps A-D of our model), the multi-stakeholder and multi-disciplinary character of open innovation processes heighten this conflict.

Optimizing innovation using crowdsourcing via social media (Steps B and C of our model): Crowdsourcing via social media is a recognized form of inbound open innovation (Leimeister et al, 2009; Majchrzak & Malhotra, 2013). Libert and Spector (2010) describe open innovation as a proven method for optimizing innovation within firms. However, Spithoven, Clarysse and Knockaert (2011) warn that the innovation potential of social media can only be harnessed if the firm's innovation processes can absorb the large amount of input generated by this approach (refer to step B of our model).

Measuring the materialised results (impact) of crowdsourcing on innovation remains a complex challenge (Orlikowski & Scott, 2014). Our model accommodates and contributes to the elements as discussed in the literature above, i.e. innovation through public private partnerships (PPP), ownership conflict and IP rights within innovation processes, and the use of social media and crowdsourcing as vehicles for co-operative innovation.

4. Method, structure and approach

4.1 Towards CodeJam 2013

CodeJam 2013 is a substantially revised version of CodeJam 2012, which was the first iteration of an experimental approach amongst a limited number of PPPs to develop (mobile) solutions for socio-economic and business (enterprise) challenges, by means of open innovation based on social media. It was conceptualised as an inbound social innovation process in which ideas/solutions developed by the community were to become part of the internal product development process of the business partner. The 2012 process required the upfront negotiation (contracting) of commercial rights with strict terms and conditions guiding the process. The limited success of the 2012 model as an inbound innovation process was the result of: the application of "strict business rules" (i.e. commercial process and rights) to an explorative 'sandbox environment"; solutions too narrowly defined for commercialisation; and, a lack of follow-through for good ideas. Apart from the development of skills in ideation, use of social media and mobile apps development, the 2012 process did not result in any solution that could be commercialised, or applied to address socio-economic challenges. However, the positive potential of the 2012 process motivated the PPPs to invest energy and resources to further develop and explore the model into a next round, referred to as CodeJam 2013.

As extracted from the literature, the CodeJam 2012 pre-agreement on ownership proved to be problematical, as too much focus was put on commercialisation at the expense of idea generation and idea development. The first lesson learned from our initial 2012 process, was that more investment was required to grow, develop and mature ideas, instead of stifling the process with ownership discussions and agreements; for example, the legal documentation of the first round is still under consideration by the various stakeholders.

Whereas the first round of CodeJam focused on idea generation for generic enterprise and community solutions, a clear lesson learned was that the open innovation process had to be embedded in the reality of the socio-economic context. Given the scarcity of resources in a developing country context, the PPP realised that the challenges to be solved had to be present in, and had to be real for communities or community representatives.

This article focuses on the description of the CodeJam 2013 model. The CodeJam PPP responsible for the 2013 model consisted of representatives of provincial and local government, an NGO (representing a large community), three universities, students and community members, 2 ICT vendors and 4 companies (of which 2 are listed on the local stock exchange). To become part of the PPP, stakeholders had to commit to participate in and contribute towards Phases 1 and 2 of the process. Phase 1 of the CodeJam process consisted of the neutral, collaborative (almost "educational") phase in which all stakeholders participated in the outbound social innovation process. Phase 2 (i.e. the competitive, business aspect of the process) focused on the selection of and investment in ideas/solutions for commercial purposes. The precondition for CodeJam 2013 participation was based on the premise that participants would waive their conditions for IP and commercial rights during the first phase of the process, i.e. no contracting would take place before or during the innovation phase of the 2013 process. It was generally agreed that the terms for the eventual commercialisation of resultant solutions were to be postponed to Phase 2 of the process.

4.2 Description of the CodeJam 2013 approach/model

The two-phased CodeJam 2013 process is presented in Figure 1.

For the experiment, as briefly delineated above, our emphasis during Phase 1 was on creating an environment free from the conflicts typically associated with similar multi-stakeholder innovation processes, whereas Phase 2 was concerned with the processes of targeted commercialisation of the successful outcomes of Phase 1.
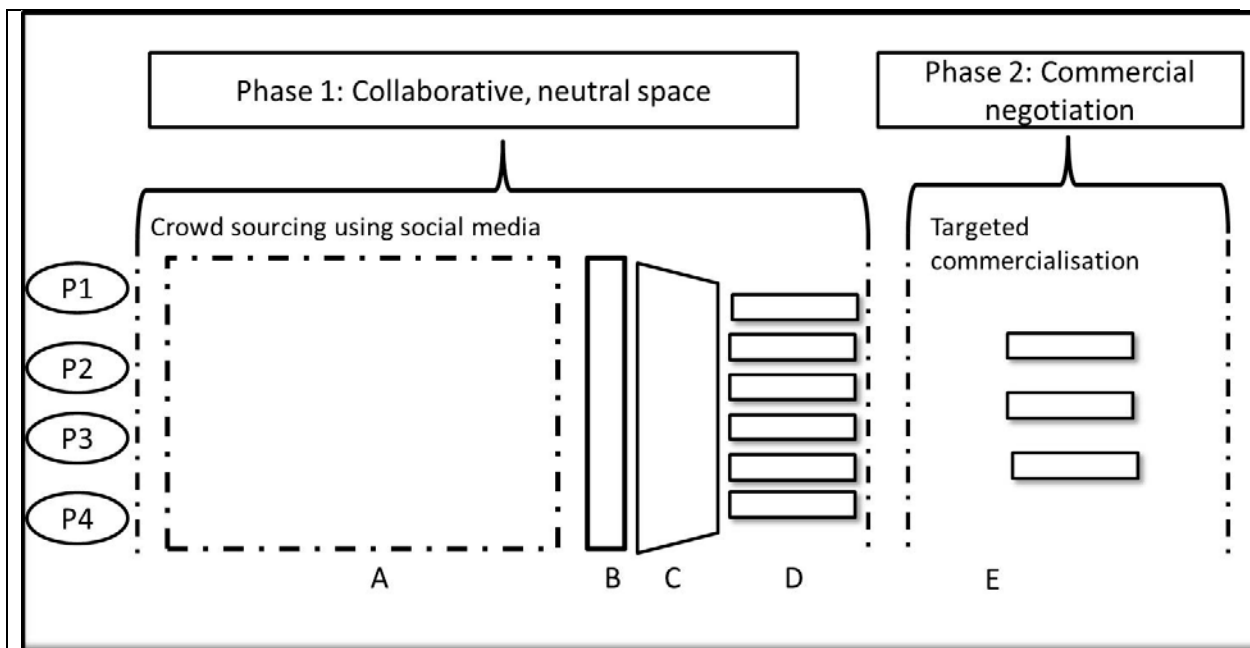
Legend:
P1-P4: Identified socio-economic problems to be addressed through social innovation; facilitating B2C interaction
Step A: Ideas composition "window" period of two weeks using crowd sourcing through social media
Step B: Period of evaluating and assessing opportunities using social media with full participation of PPP
Step C: Face-to-face ideation workshop with full participation of PPP
Step D: Teamwork based on solution-refinement, case development, apps development and prototyping
Step E: Commercial negotiation – still to be refined
Figure 1: The phases of the outbound open innovation process

The "internal dynamics" of Phase 1 are briefly described below:

▪ Representatives of the government and the NGO sectors identified four real-life socio-economic challenges (P1-P4 in Figure 1) in the surrounding community which required innovative solutions. The challenges ranged from addressing transport difficulties to support for young job seekers. The representatives of the government departments (local and provincial) and the NGO committed themselves to take the refined ideas (mobile solution) forward. In principle this could require the provision of sponsorship for the incubation of ideas, acquiring venture capital, or to deploy the solution in their particular portfolio. This elicited the appetite from business as it provided them with an ideal opportunity to obtain insight into community (consumer) problems and community-developed solutions (social or open innovation). It has huge potential for business as this can facilitate and inform the B2C business strategy and provide fresh input/ sources into the innovation process.

▪ Based on the principles of crowd sourcing, community members between the ages of 18 - 25 were invited to propose solutions for these problems using the custom-build social media platform (see step A in Figure 1). In the guise of an 'ideas competition' the social media idea portal was open for 2 weeks for postings.

▪ Using the same idea portal, ideators were then afforded the opportunity to vote for and give a weighting to "popular" or feasible ideas. The stakeholders (PPP) participated in this process by adding to ideas, sharing research information to support or redirect ideas, or simply by indicating support for a particular line of thinking in this neutral, open innovation space (step B in Figure 1). The democratic nature of social media as platform made it possible for stakeholders to contribute across sector boundaries (business, community academia and government), as postulated by Phills, Deiglmeier and Miller (2008). Typically, this selection and refinement of ideas would happen within the internal R&D processes of a company.

▪ Given the magnitude of the ideas sourced via the social media platform, a face-to-face ideation workshop was introduced with the main objective being the optimal development and refinement of the ideas. Ideators had the choice to work in self-selected teams or as individuals. This step addressed the absorption capacity challenge posed by crowd sourcing (Spithoven, Clarysse and Knockaert, 2011). Atypical to crowd sourced inbound innovation (Leimeister et al, 2009), this step of the innovation process, happened "outside" the internal boundaries of the PPP further enhancing cross-boundary participation. As the result of the dilation of organisational boundaries during step B of the process - given the democratic nature of social media - cross-boundary participation followed naturally during this face-to-face workshop (step C).

▪ Step D required ideators/participants to work in teams to refine their solutions, build a business case for the solution, and translate the case into a mobile app, or a prototype for a mobile app. Participants were motivated to work in teams as CodeJam 2012 clearly demonstrated that innovation (and related learning, knowledge creation) is enhanced by multi-disciplinary collaboration (see Hearn & Bridgstock, 2009). As in steps B and C, ideators had open access to stakeholders for guidance and support.

▪ During steps A - D of the model, the stakeholders provided training to participants on mobile apps development (iOS, Android, prototyping), design thinking and business case development - a concept we referred to as *outernships.*

▪ Phase 1 of the CodeJam 2013 process was concluded with the presentation of the ideas to an evaluation panel comprising of the CodeJam 2013 PPP (stakeholders), to identify those solutions that best addressed the challenges. The entire first phase happened in a neutral, collaborative space (virtual and physical) outside the boundaries of any of the stakeholders' ownership; hence the reference to this model as an outbound open innovation process.

Although outside of the framework of this paper, the internal dynamics of Phase 2 are briefly described below:

▪ This phase of the CodeJam 2013 process is still unfolding - it is an area that requires detailed attention in the months to come. As agreed at the onset of the process, stakeholders could exercise the right to choose a particular solution with the view of commercialisation. The latter choice implies that commercial and IP right negotiations have occurred in a limited fashion, only with those individuals who formed part of the particular solution.

▪ In reality, the flow from Phase 1 to Phase 2 is not as linear as anticipated. The generated solutions varied in magnitude which calls for different methods of intervention towards commercialisation. For example, some solutions need to go into a pre-incubation phase to further develop the proposal or business case, whereas others require significant financial investment, which is the domain of venture capitalists.

- The PPP is currently in the process of developing and expanding Phase 2.

5. Outcomes

The addition of social media in a neutral innovation space contributed new insights and possibilities for PPPs to address socio-economic challenges in a systemic manner. These novel insights enabled the researchers to extract a number of outcomes which may impact positively on how PPPs can be structured to facilitate open innovation for socio-economic development. This also has implications for how business conducts open innovation to develop solutions. Although these outcomes have been observed and manifested in a developing country context, their impact is not restricted or limited to environments fitting that status only; rather, evidence suggests that the outcomes may be equally applicable in an industrial economy context.

The major outcomes of the study are described below:

- Applying social media in the innovation process facilitates the fusion and collaboration of PPPs (stakeholders) across boundaries, a process described by Phills, Deiglmeier and Miller (2008) as "dissolving sector (silo) boundaries." *Although parties agreed to collaborate, they still 'toil' within the boundaries of their respective silos.* The CodeJam 2013 model supports the notion that the democratic and open nature of social media as innovation platform enables parties/stakeholders to collaborate equally in an open, boundary-less space. Social media, therefore, contributes to dissolving sector boundaries amongst multiple parties in their effort to address socio-economic challenges.

- The neutral collaborative space outside the traditional stakeholder boundaries facilitated the unrestricted participation in the co-creation phase in view of creating the best solution for the problem. The CodeJam 2013 model, therefore, proposes the concept of *outbound innovation* as a potential viable model for structuring innovation initiatives. Outbound innovation as argued by Altman, Nagle and Tushman (2013), leaves the innovation outside the internal R&D sphere of individual stakeholders, which is in contrast to the typically observed classic open innovation (i.e. inbound innovation) that draws innovation into the firm.

- Outbound innovation, as proposed in this model, is a viable option under the condition that the collaborative space (steps A, B and C in Figure 1) is not restricted by IP and commercial requirements. As experienced during CodeJam 2013 the reduced focus on IP rights created a safe space free from the pressures of the profit motive which contributed to the pursuit of the primary objective, i.e. innovation (Altman, Nagle & Tushman, 2013). We argue that the cohesion of stakeholders during this process can be attributed to trust relationships and the commitment to be change makers (see: Wang, Yeung & Zhang, 2011; Phills, Deiglmeier & Miller, 2008).

- Open innovation based on social media can be significantly enhanced by allowing ideators to engage in face-to-face situations for idea development and refinement (step D - warm bodies in addition to cyber bodies/ideas). This argument counters the capacity absorption dilemma of companies to deal with the scope/magnitude of ideas generated by means of social media (Spithoven, Clarysse & Knockaert, 2011). This face-to-face interaction, open for participants and representatives of the PPP, provided the additional opportunity for stakeholders to add depth and wisdom to the idea refinement process. This agrees with the observation by Phills, Deiglmeier and Miller (2008) who state that *"thought leaders generate the kind of knowledge that can truly support the development of social innovation."*

- The safe, neutral space (provided in steps A-D) not only contributed towards the innovation process, but facilitated the stepping out of the typical silo mentality into an education-focused arena of transdisciplinarity (Hearn & Bridgstock, 2009) which is required for the development of solutions to complex problems.

- The radical transgression of silo (business and disciplinary) boundaries also enabled stakeholders to develop confidence in cross-boundary and transdisciplinary collaboration (e.g. co-operation, networking, and partnership formation, impact of synergistic allegiances and alliances) - a core skill that stands them in good stead in the growth and survival of their own businesses/endeavours.

6. Conclusions

This systemic approach to open innovation based on social media proved to be a viable model and alternative for the development and commercialisation of socio-economic solutions. The approach followed by the researchers was an attempt to present an alternative method of "doing things", i.e. novel combinations of

skills, competencies and resources to achieve the desired/anticipated outcome: an optimised social innovation process, enriched by mobile and social media technologies, without the restrictions of ownership contracts.

Successes attributed to this approach are: (i) the ability of our model to promote the quality and social impact of innovation as the highest priority in a developing country context, with ownership, IP rights, and the internal strategies of stakeholders being managed as secondary concerns in a separate post-innovation contracting phase; and, (ii) the model's support for the notion that social media can be used to build multi-stakeholder partnerships, break down traditional silos of ownership, optimise innovation, and increase the absorption capacity of the innovation process.

This research project showed that a multi-stakeholder partnership (PPP) consisting of business, academia, government and the community not only creates a full array of positive outcomes manifested in new opportunities, business growth, individual advancement, but more so the commercialisation of hitherto profitable solutions for socio-economic challenges. Future avenues of research include the development of detailed guidelines for the second (contracting and commercialisation) phase of our model.

With its objective of proposing an implementable, systemic model that optimises innovation through social media and which minimizes conflict in the commercialisation of open innovation, this South African PPP moves us with clarity into a new direction that correlates with the literature, namely that innovation (social and otherwise) is optimised outside the boundaries of the firm, enriched by multi-stakeholder participation, and enhanced through social media.

Acknowledgements

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Customer Complaints and Service Recovery on Social Media: An Investigation into Barclays Bank Facebook Page

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Abstract: Purpose: The services marketing literature recognises the importance of technology in improving service quality, customer satisfaction and providing efficient service recovery tactics. There is evidence on how technology affects consumer complaints and recovery strategies. However, academic research on social media, as an emerging technology platform, is rather scant. This is surprising since many businesses have extended their service provision to include social media platforms. The purpose of this paper is to extend the research on social media and provide insights into customer complaint behaviour and service recovery strategies using social media. In turn, research on outcome and process related service failures and resource-exchange theory are used to form the theoretical framework of this paper. **Methodology:** The context of this study is the banking industry. It serves as a valuable means by which to understand social media customer services because banks are using social media platforms as part of in their multi-delivery channels. The focus is Barclays Bank Facebook page which provides rich data for observing customer firm interactions. There were 255 customer complaints (and subsequent comments) posted in June-July 2013 that were analysed using qualitative data analysis methods. **Findings:** Evidence is presented on the overwhelming number of outcome-related service failures. This suggests that customers are more likely to place a complaint on firms' Facebook pages when there is a problem with the delivery of a core service. Moreover, the data extend the applicability of resource-exchange theory to social media customer services. There was a fit between the type of service failure and recovery efforts. More customers with process-related service failure received an apology and empathetic response than customers with outcome-related service failures. Finally, there were inconsistencies among Facebook teams in terms of the way they responded to customer complaints, which we call the "*social media lottery*". Depending on the people who were working, some customers received a faster and more empathetic response, and some received privileged treatment such as the Bank's Facebook team calling the customer's branch to book an appointment on behalf of the customer. **Practical Implications:** The findings demonstrate the need for frontline social media staff to receive appropriate training and empowerment that enables them to work effectively to address service failures in a consistent way. **Originality / Value:** This research improves understanding of social media customer services by presenting empirical data on how customer complaints are managed on Facebook. More specifically, Facebook offers a good opportunity to observe the different parties interacting. In comparison with traditional service encounters, social media encounters are more transparent involving multiple actors. In this study, there is a critical examination of how customer complaints and recovery strategies are affected in the new social media context.

Keywords*:* social media, service failure, service recovery, customer services, financial services, resource-exchange theory

1. Introduction

Service failures are common in the services industry (Chuang *et al.* 2012) which has a direct impact on customer dissatisfaction by threatening their loyalty (Dalziel *et al.* 2011). Consequently, it is important that firms retain dissatisfied customers through appropriate service recovery strategies. There is a debate in the services marketing literature concerning what is *appropriate service recovery* for customers. Researchers approach this situation from a range of theoretical standpoints. Resource-exchange theory (RET) has recently attracted the attention of service failure researchers (such as, Mattila *et al.* 2011; Chuang *et al.* 2012; Roschk and Kaiser 2013), and is used to construct the conceptual framework of this research (Figure 1).

Developed by Foa (1971), RET suggests resources perceived as similar are more likely to be exchanged than dissimilar resources. The purpose of this research was to expand the applicability of RET to social media customer services. First, there was an investigation of whether firms' social channels were popular for certain types of service failures. Then, by using RET there was an examination of whether there was a match between the type of service failure and service recovery strategies. Drawing on prior empirical research, Figure 1 illustrates the impact of service failure and recovery strategies on relationship quality. This paper examines the interaction at the top half of the model which is shown in grey.

2. Service failure

Service failure is defined as situations in which customers' perceptions of the service they receive fail to meet their expectations (Chuang *et al.* 2012). When customers experience problems with service delivery, this can have a significant impact on their levels of satisfaction (Dalziel *et al.* 2011), relationship commitment and word-of-mouth behaviour (Hart *et al.* 1990; Jones and Farquhar 2003; Boshoff 2007).

Figure 1: Conceptual framework employed in the research process
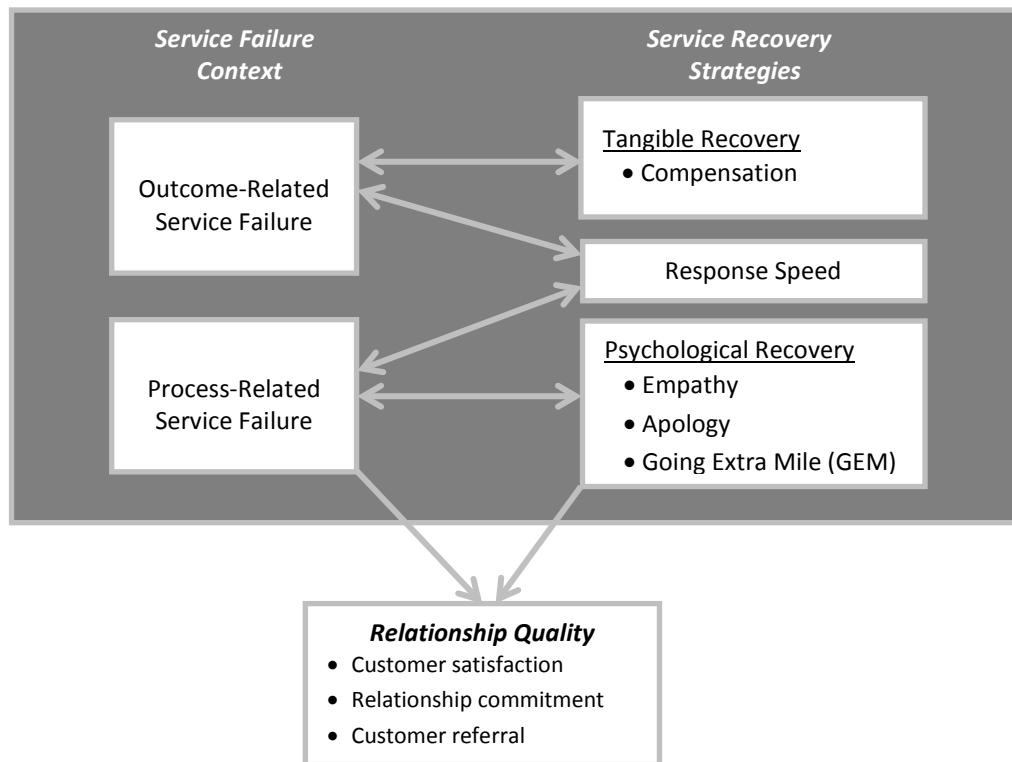
The services marketing literature recognises various types of service failures. Using a typology developed by Bitner (1990), Keller *et al.* (2001) and Hoffman *et al.* (1995) it is possible to categorise service failures into three types which are employee responses to service delivery system failures, implicit / explicit customer requests, and unprompted and unsolicited employee actions. Keaveney (1995) divided service failures as core service and service encounter failures. Similarly, Smith *et al.* (1999) distinguished between outcome- and process-related service failure (ORSF and PRSF). In the case of ORSF it is related to what customers actually receive from their service provider while in the case of PRSF it refers to how the service is delivered. In an ORSF, the provider fails to fulfil the basic service need or perform a core service. In PRSF, the delivery of a core service is flawed or deficient which is directly attributable to the behaviour of service employees. It is argued that ORSF is associated with an economic loss and PRSF causes social / psychological loss for the customer (Smith *et al.* 1999). Thus, ORSF typically involves a utilitarian exchange while PRSF involves symbolic exchanges.

3. Service recovery

Service recovery is defined as "the actions that a service provider takes to respond to service failures" (Lewis and Spyrakopoulos 2001:37). Well executed service recoveries are important for promoting customer relationships due to their impact on customer loyalty (Smith *et al.* 1999; Dalziel *et al.* 2011). In most situations it is not the initial failure to deliver the core service, but staff responses to the failure that causes dissatisfactory service encounters (Bitner *et al.* 1990). Along with solving the problem, customers want to feel that organisations care about their problems and keep their interests at heart (Lewis and Spyrakopoulos 2001; Dalziel *et al.* 2011). This caring approach needs to include acknowledging the problem, explaining why the service is faulty or unavailable, apologising, and assisting the customer in solving the problem by suggesting different options, which can all make a positive impact on the customer experience despite a service failure having occurred (Bitner *et al.* 1990). In turn, the tone of the response (Hart *et al.* 1990) and the sincerity of the apology (Mattila *et al.* 2011) are likely to improve the chances of success of service recovery efforts. On the other hand, a negatively perceived character or attitude of company staff (both verbal and nonverbal) has been found to cause more dissatisfaction than the deficient quality of the core service alone (Bitner *et al.* 1990).

In demonstrating the critical role of service interactions between the customer and their bank, it has been shown that effective communication characteristics of service delivery are different from effective service recovery attributes (Dalziel 2007). The following service recovery attributes are identified as having the potential to influence customer relationships: empathetic behaviour (1) and trust in the customer (2), apologising for mistakes (3), being proactive in dealing with mistakes (4), continuously communicating (5), adequate recovery speed (6) and whether the customer was refunded at the end of the recovery process (if relevant) (7). According to research by Miller *et al.* (2000), these attributes can further be categorised as tangible and psychological. Characteristics such as empathetic behaviour and apologising are viewed as psychological service recovery efforts while in tangible recovery the service is re-performed, the product is exchanged, and a monetary compensation is offered. A considerable amount of research supports the idea that customers who receive an apology following a service failure are more satisfied than customers who receive no apology (Roschk and Kaiser 2013). At the same time, Roschk and Kaiser (2013) provided empirical evidence that not only the presence or absence of an apology, but how an apology is given, is crucial in enhancing customer satisfaction. They state that the more empathetic and intense an apology in its delivery, the more satisfied customers are.

4. Service failures types, recovery efforts and resource exchange theory

Customers' evaluations of service failure and recovery strategies depend on the failure type (ORSF versus PRSF), failure magnitude and service recovery attributes (tangible versus psychological) (Smith *et al.* 1999). There is evidence that customers do not only expect a failure to be resolved to their satisfaction, but they also expect a fit between the type of service failure and the recovery efforts. Chuang *et al.(2012)* demonstrated that customers who experience ORSF are more satisfied with tangible service recovery efforts and those who experience PRSF are more satisfied with psychological recovery efforts. This is explained with reference to RET. RET was originally developed by Foa (1971) as a psychological exchange theory. According to Foa, people prefer to exchange similar resources rather than dissimilar ones. Although RET was reported to have "fallen out of favor" at one time (Arnould 2008:22), it is still the dominant framework in the marketing literature (Mattila *et al.* 2011). Smith *et al.* (1999) demonstrated that customers preferred service recovery efforts that match the loss (e.g., monetary compensation for overbooking or empathy for a social loss). Similarly, classifying apology as a social or psychological resource, Roschk and Kaiser (2013) argue that it is more effective when a customer faced a PRSF than an ORSF situation. In another study by Mattila *et al.* (2011), it is suggested that human involvement (such as interacting with frontline staff) was more effective when the

failure was caused by a human being rather than by a machine. In comparison, human involvement was less effective when a failure was caused by self-service technology. This is because consumers who choose to use self-service technologies to interact with their service providers wish to avoid customer–employee interactions.

Consequently, from this review we can infer that a match between the type of service failure and recovery efforts is likely to promote customer satisfaction. Moreover, customers who interact with their service providers primarily through self-service technologies prefer minimal human interference when a service failure occurs. Yet, there are uncertainties about how useful RET is in explaining social customer behaviour when service providers and their customers interact through social media. In a continuum from human interactions (such as talking to a member of staff in a bank branch) to technology-mediated interactions (such as online banking), it is not defined yet where social media interactions can be placed in this continuum. Drawing on RET, the aim of this paper is to provide insight into social media interactions between firms and their customers.

5. Research methodology

There are different social media channels, and this paper focuses on Facebook as a commonly used social media channel for customer services (Littleton 2013). The context of the study was the banking industry. It served as a valuable means to understand social media customer services since banks have started to include social media platforms in their multi-channel communication strategies. When deciding which bank to include in the research, a search was undertaken of the UK banks with an active Facebook page that allowed people to post comments and queries on its page. It was also important that the bank did not frequently delete or block customer posts. Consequently, it was decided to select Barclays Bank UK Facebook page which provided rich data enabling the observation of customer-firm interactions.

The research data consisted of customers' service failure related posts and responses by Barclays Facebook team. Due to the large number of consumer posts, it was decided to set a limit on the number of posts analysed. The data collection took place between 1st June and 15th July 2013, which resulted in the collection of 255 customer posts. The next stage comprised an emphasis on the responses by Barclays Facebook team to these posts. Comments were tracked until there were no further posts. Since the focus of the study was on customer-firm interactions, posts which were not responded to by Barclays and posts from other non-bank people commenting on a customer's query or the bank's response were excluded from the analysis of data. This data collection strategy resulted in the examination of over 800 posts which formed the base of the subsequent data analysis.

The analysis of this textual data comprised the use of qualitative data analysis methods guided by the principles underpinning content analysis. Content analysis is a technique used to obtain a systematic and objective description and explanation of textual data (Berelson 1952; Kassarjian 1977; Miles and Huberman 1994). In this case, the analysis started with an a priori set of codes that emerged from the literature review and conceptual framework. Starting with a set of codes prior to fieldwork is recommended for studies where research questions are well defined and a theoretical framework is developed. In this case, pre-structured coding is reported to facilitate the analysis by forcing the researcher to tie research questions or conceptual interests directly to the data (Miles and Huberman 1994; de Wet and Erasmus 2005). For example, there were higher-level codes such as ORSF and PRSF, and a number of first-level codes as sub-categories of these higher-level codes. Each customer post was first coded as ORSF, PFSF or both (such as a post referring to a problem with money transfer and at the same time a complaint about the waiting time on a telephone Help Line to talk to a member of staff). Then the sub-category for each code was identified (such as money transfer, problems with online / mobile banking and unavailable system for ORSF code). Similarly, responses by Barclays Facebook team were treated as recovery strategies. They were first coded as tangible or psychological recovery strategies which constituted higher-level codes. Then, they were coded into sub-categories such as response time, level of empathy and whether an apology was offered. It is important to note that the initial code list evolved along with the analysis. New codes and sub-categories emerged while some codes were redefined, removed or merged with others as more data was analysed.

Computer software programs can be used to facilitate data analysis and interpretation by providing support in storing, coding and retrieving data. In addition, computer software programs can help researchers become familiar with a large amount of data within a relatively short time frame. In this case, NVivo 10 was used to facilitate data analysis. As the dataset source, **Facebook wall posts and comments** were imported into NVivo 10 using NCapture for coding and further analysis.

6. Research findings

6.1 Service Failure Types on Barclays Facebook Page

Of the 255 customer complaints that were analysed, 163 posts (64 percent) were identified as ORSF whereas PRSF totalled at 29 posts (11 percent). Sixty three complaints (25 percent) were related to both outcome- and process-related failures. Table 1 lists the top five ORSF complaints.

Table 1: Top five outcome-related service failure complaints on Barclays Facebook page

	Number of complaints	Percentage
1. Unavailable service / system being down	41	18%
2. Issues with transferring money / making a payment	39	17%
3. Blocked / deactivated bank account	26	11%
4. Account being used fraudulently	17	7%
5. Service charges / fees	16	7%

The majority of ORSF complaints were related to online and mobile banking being down and hence the customer not being able to access their account (41 complaints). This has followed by problems with transferring money and making a payment (39 complaints), blocked account or bank card (26 complaints), fraudulent use of an account (17 complaints) and service charges (16 complaints). Customers with a blocked card or account and those who felt they were charged unfairly expressed their intention to terminate their

relationship with Barclays if their complaint was not resolved. This could also be related to the fact that customers had already informed Barclays through other traditional communication channels such as their branch, help line and online banking team about their problem, yet receiving no resolution to them. When customers voiced their complaint on social media, they were already stressed, feeling frustrated and had lost their trust in Barclays:

> *"…I am left with 1 Option "Take it Public via the Media" as Barclays don't give a toss about me as a customer!"*

In comparison, PRSF complaints were largely related to communication quality (38 complaints) and waiting time (34 complaints). Table 2 lists the top five PRSF complaints. Scored as "1 out of 100", customers' comments on the quality of interaction with their bank staff were "dreadful", "less than helpful", "rude", "one ear doesn't know what the other ear is doing" and "as helpful as a chocolate fire guard". Call centre representatives were claimed to be "not professional", "not competent", "not caring for small customers!", "hanging up and talking down to customers" and "promising but not doing anything". It is interesting that some customers thought bank staff needed "diversity training" while a few customers kept referring to the perceived ethnicity of the help line representatives. In their post, some customers referred to talking to an "Asian" with "an Indian accent" who "didn't even know where Exeter or Devon was in the UK", which felt like this contributed to customers' perceived poor quality of the service.

After communication quality attribute, the next common complaints were about waiting time on the help line (which changed from 15 minutes to two hours) and the customer being disconnected or transferred to another representative constantly: "Only 10% of this time was spent talking to staff, the rest was just waiting. About 2 hours." Customers also complained about the cost of the phone calls which was over £30 in some situations. In particular customers calling from abroad (9 in total) had concerns about the high cost of phone calls. Consequently, those customers requested compensation for their calls, asked for a landline number and a call-back. Of 92 PRSF complaints, the perceived communication quality was identified as the most crucial aspect of the process. Fifty-four percent of customers who threatened to switch their bank account had complaints about the poor interaction quality with Barclays.

Table 2: Top five process-related service failure complaints on Barclays Facebook page

	Number of complaints	Percentage
1. Issues with communication quality	38	36%
2. Waiting time on Help Line	34	32%
3. Staff behaviour to customers	8	7%
4. Inconsistencies of information given by different Help Line representatives	7	7%
5. Line being disconnected / not answered	7	7%

7. Service Recovery Strategies by Barclays

The data analysis included the 255 customers' service failure related posts which received a reply from Barclays Facebook team. This resulted in over 800 responses and comments, which formed the base for the analysis in this section.

(i) Tangible Recovery Strategies

Only three complaints were identified that resulted in the offered monetary compensation. In the first situation, the customer faced both outcome- and process-related service failure and was living overseas. The customer had already voiced her complaint using traditional banking communication channels with no resolution to their problem, and then used Facebook "to highlight the hassle [she] had to go through every time there was a problem with [her] account." The customer's account was credited for the phone calls incurred as a goodwill gesture by the bank. In the second case, the customer appeared to be a victim of fraud. Similarly, this complaint had already been filed by the bank. In both cases, the customers were refunded for costs incurred after they posted their complaint on Facebook. Although customers were appreciative when their problems were resolved, they were not pleased their problems were addressed because of the role of social media (and not because of having the customer's interests at heart): "I tried the usual route of phoning the fraud line, going in to my bank branch. I finally got it [the problem] sorted once I posted it on a social

network site, not ideal." In the third case the customer had both outcome- and process-related service failures, and complained through phone calls to Barclays costing over £30. The bank offered a landline number stating "calls to this number are charged at a local rate and should be included in any inclusive mobile minutes."

It was disappointing that it was possible to identify only very limited number of tangible service recovery efforts. This could be due to Barclays not being willing to announce their monetary compensation strategies on a social media platform.

(ii) Psychological Recovery Strategies

In line with the literature, it was decided to examine the number of apologies, how an apology has been made and whether the bank's response was empathetic. Barclays Facebook team appeared to be paying good attention to apologising for the service failures their customers were facing. Sixty six percent of ORSF complaints (149 posts) received an apology in the first response from the bank, and this ratio went up to 85 percent for PRSF complaints (78 posts) (Chart 1). On the other hand, it was possible to identify that not in all cases did the bank apologise for the right reason. For example, there were situations when the Bank's Facebook team apologised not for the service failure but for the delay in responding to the customer's post or customer's response to service failure: "We're sorry to hear you're thinking about leaving us." There were also instances when the bank offered a rather unemotional scripted apology: "Apologies for any inconvenience caused." When an apology had no emotional element, customers did not seem to consider the response to be sincere: "You are sorry?" These are examples of types of communication that do not depict empathy or aim to facilitate a close relationship between bank and customer.

Chart 1: Psychological recovery strategies in relation to outcome- and process-related service failures
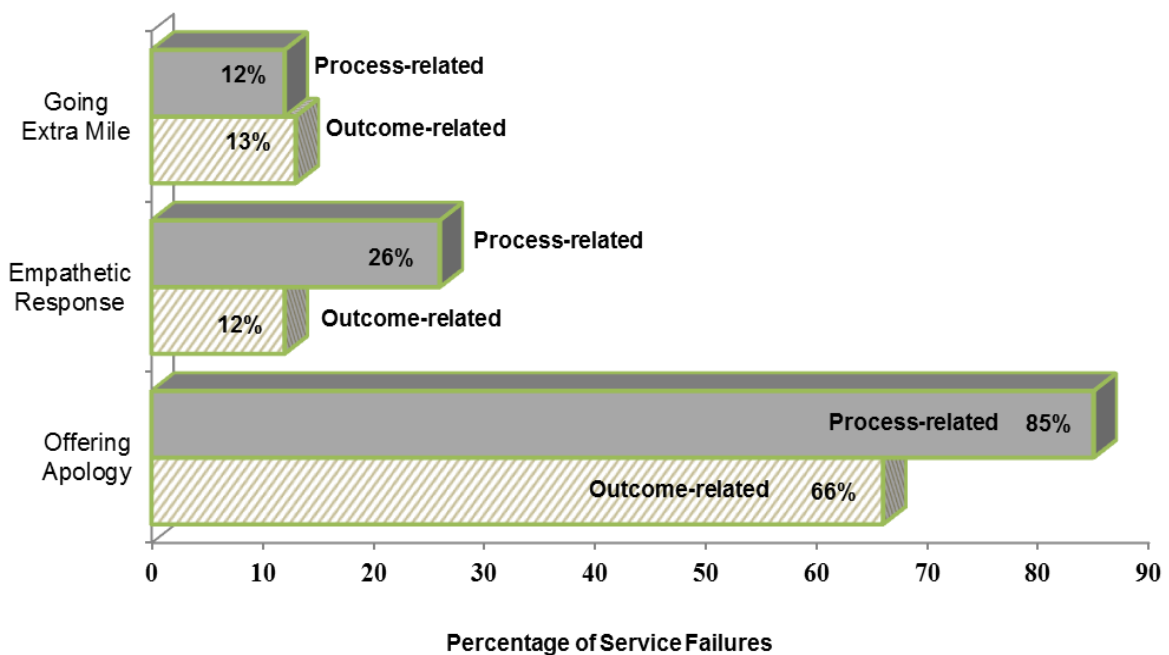
A particular psychological service recovery attribute is empathy. Twelve percent of ORSF complaints (28 posts) received an empathetic response from Barclays Facebook team in comparison with 26 percent for PRSF complaints (24 posts). When responding to customer complaints, the bank expressed the view that they were "very sorry to hear how a customer feels about their bank" and they "certainly didn't want [their customer] to feel this way". The team offered "a sincere apology" and "appreciated the [customer's] frustration or position" in respect of a service failure and the length of time it took to resolve the problem. The bank also wanted the customer's "the next call [to Barclays] to be a better experience". There were cases when Barclays posted an empathetic response to a problem even after a customer had informed the bank they had opened an account with a competitor:

> *"We're sorry to hear that you've opened your account elsewhere. It is regrettable that an appointment wasn't available sooner. We'll share your feedback with our team in [branch name]."*

It was possible to identify 30 service recovery posts where Barclays made a clear attempt to introduce a personal touch that went the extra mile. For example, instead of directing the customer to another department, Facebook staff offered to pass the customer's complaint to the relevant bank team, contacted the customer's branch or business manager on behalf of the customer to book an appointment, checked the image that the customer wanted to upload for their personalised card to see whether it fits the image requirements, offered a local telephone number instead of a usual 084 number, posted a new PINsentry to customer, and offered a call back.

8. Individual responses by facebook team to customer complaints

This section examines whether Barclays Bank customers received a consistent service from the whole Bank Facebook team. On the whole, there was a satisfactory balance of customer posts between the members of the team. Each advisor answered around 36 posts on average. With respect to the number of apologies offered, there was a good consistency. The majority of staff offered an apology when responding to service failures.

On the other hand, there were important variations on whether the bank's response was empathetic versus unemotional, ranging from 0 to 19 percent across the team. Similarly, there was a considerable difference in whether the bank advisor went the extra mile and introduced a personal element into the service recovery effort, ranging from 0 percent to 11 percent. For example, a number of customers wanted to apply for a Barclays Bank personalised card. However, the system did not accept their photo image. When customers complained, some team members were happy to check the image whereas other team members simply directed the customer to the Barclays Bank website to check the guidelines for image uploading. Likewise, customers appeared to receive a faster response to queries depending on who answered their query, which ranged from 35 to 99 minutes on average. Other areas of important differences between the team members were whether the complaint was resolved by the Bank Facebook staff (ranging from 5 to 14 percent) or the customer was simply directed to another department (ranging from 17 to 80 percent).

Consequently, it seems that depending on who was working on a particular shift, some customers received a faster and more empathetic response than others, and some even received privileged treatment, which was seen as part of "*social media lottery*".

9. Conclusion and managerial implications

The service recovery strategies used by Barclays Bank Facebook team appeared to operate mostly in parallel with RET theory. Bank customers with PRSF problems seem to be more likely to receive an apology and empathetic response than customers with an ORSF complaint. However, in terms of going the extra mile, the difference between PRSF and ORSF was minor. Likewise, response speed by the bank for PRSF and ORSF posts was similar. There were limited observations of tangible recovery efforts. Yet, in all cases customers were refunded for monetary loss (phone charges and losing money fraudulently) suggesting tangible recovery strategies were used in response to ORSF queries. Thus, our data has confirmed the applicability of the RET in a social media context.

Moreover, it was possible to identify a good allocation of outcome- and process-related service failures, dominated by ORSF complaints. It emerged that social media is commonly used as a follow-up for ongoing complaints that had already been voiced using traditional banking communication channels. Customers wanted to take advantage of social media being an open communication channel with the expectation that this could speed up the service recovery process. The majority of service failure complaints were related to technology failures such as unavailable service. This is in conformity with a study by Mattila *et al.* (2011) who report that customers prefer to use technology-driven communication channels when they need to deal with a technology-related service failures.

Meanwhile, confirming the study by Roschk and Kaiser (2013) it is shown that the way an apology is offered is equally important in customers' evaluations of service recovery efforts. However, a simple apology is unlikely to be sufficient by itself. As stated by Smith and Bolton (2002):

"Redressing service failures means more than smiles - it means delivery of core services. Thus, service employees must have a real ability to improve customers' situations." (p.20)

Finally, considerable variations were identified in the bank's responses to customer complaints (Table 3). There were instances where the Bank's Facebook team responded satisfactorily but other times the response to a similar type of query from another customer was less helpful. There were instances when the Bank's Facebook team openly addressed a query whereas another similar type of query was directed to another banking communication channel and so on. These examples highlight issues with the training and empowerment of Barclays Bank social media staff. The bank's social media policies could be better communicated throughout the frontline team and highlights training needs for the bank's social media personnel.

Table 3: Service recovery efforts by Barclays Bank Facebook team members

	Number of ORSF posts replied	Number of PRSF posts replied	Average response speed (in minutes)	Offering an empathetic answer (%)	Apologising for failure (%)	Going the extra mile (%)
Facebook Team Member 1	34	20	86	7	9	4
Facebook Team Member 2	38	15	99	19	11	7
Facebook Team Member 3	21	5	66	0	42	0
Facebook Team Member 4	41	14	35	18	18	11
Facebook Team Member 5	37	11	52	8	19	4
Facebook Team Member 6	35	16	73	18	24	5
Facebook Team Member 7	29	14	64	2	23	1

Acknowledgement

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Using Social Networks in Smart City: organizational challenges, synergies and benefits

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Abstract: The opportunities and challenges implied by the use of Social Networks to enable government initiatives have been only partially investigated by e-government and e-participation studies so far. In this paper, we suggest that the potentially strategic role of Social Networks in the creation of public value could be better understood by analyzing the possible synergies between these systems and Smart City strategies. The Smart City approach, in fact, considers the citizen's quality of life as the final performance indicator, **and** is particularly suitable to exploit the interactive, collective, collaborative and bottom-up nature of Social Networks. We identify two key aspects of Smart City Social Networks: performance measurement issues and organizational issues. Then, by proposing a three-steps model for Social Network adoption in Smart City programs, we suggest the conditions under which these systems can contribute to improved municipal services, enhanced civic engagement, and better reciprocal awareness between the citizens and the public or private organizations in charge of Smart City initiatives. The contribution of this paper and its novelty resides on the specific focus on the role of Social Networks in Smart City initiatives. To our knowledge there are no scientific papers till now facing this topic of using Social Networks to enhance Smart City strategies.

Keywords: Social networks, social media, e-government, e-democracy, e-participation, smart city

1. Smart Cities and Social Networks, the Components of a Possible Synergy

A Smart City can be defined as a developed urban system where sustainable economic development and high quality of life are created and supported, thanks to excellent performances in multiple key areas: economy, mobility, environment, people, living, and government (Giffinger 2007). To achieve these goals, ever-improving human capital, social capital, and ICT infrastructure are needed and must be developed throughout time (Caragliu et. al. 2009).

The concept of Digital City often complements that of Smart City. The Digital City idea is more focused on the use of ICT; it aims "to build an arena in which people in regional communities can interact and share knowledge, experiences, and mutual interests" (Ishida 2000) and its success relies on the fact that people are more and more connected through the Internet (Dameri 2012).

There are two main aspects involved in a Digital City planning: (i) *public (e-)services delivery* and (ii) *citizens' participation to political debate and local governance*. These two aspects of a Digital city strategy are the core issues of two important streams of studies, i.e. e-government and e-democracy respectively (OECD 2011). However, in the Digital City context these issues are characterised by some distinctive elements, such as the local range of influence, the link with specific local policies, the overlapping between virtual and real relationships between citizens. Therefore, a digital city has an autonomous configuration, which specifically defines it with respect to more general fields of studies such as e-services, e-government, e-democracy and so on.

The Digital City is a part of the larger Smart City strategy. "A smart city is a well-defined geographical area, in which high technologies such as ICT, logistic, energy production, and so on, cooperate to create benefits for citizens in terms of well-being, inclusion and participation, environmental quality, intelligent development" (Dameri 2013b). A Smart City strategy aims to improve the quality of life in the urban area by creating more inclusive and favourable economic conditions for all, reducing the environmental footprint of the city infrastructure, and creating physical and virtual platforms to deliver e-services and grant a large access communication platform. ICT plays a pivotal role to achieve all the goals of the smart city strategy (Su 2011).

Key elements of a Smart City are (Figure 1):

- high technologies, especially ICT, to support the innovative and sustainable urban development;

- private organizations producing infrastructures and platforms to realize the smart strategy;

- human and social capital, connecting people and producing a better quality of work, culture and relationships;

- public governance processes and structures, realizing e-service delivery, e-government, e-democracy;
- environmental sustainability.
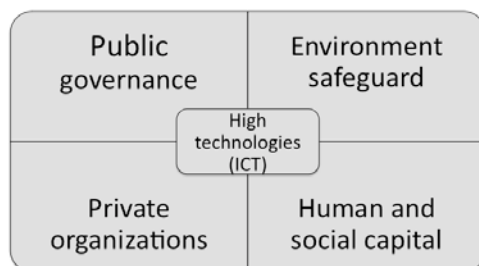
Figure 1: The main components of a smart city (source: Authors).

Several of these aspects are strictly linked to the role of Social Networks and Social Media in urban areas.

The concept of Social Media focuses on the technological tools used to connect people and to support data sharing (Leonardi et. al. 2013); among these technologies, the Internet plays the leading role (Ahkqvist et. al 2008; Kaplan and Haenlein, 2010).

The concept of Social Network, instead, is more focused on people than on infrastructures. It refers to the social actors – both individuals and organizations – creating a social structure thanks to the network of ties between them (Wasserman and Faust 1994). A Social Network, when supported by a Social Media, creates a social web, i.e. a set of social relations that link people through the World Wide Web (Halpin and Tuffield 2010). The merge of both the technological infrastructures and the human role in building relationships produces the enormous success of these web media, connecting billions of people all over the world.
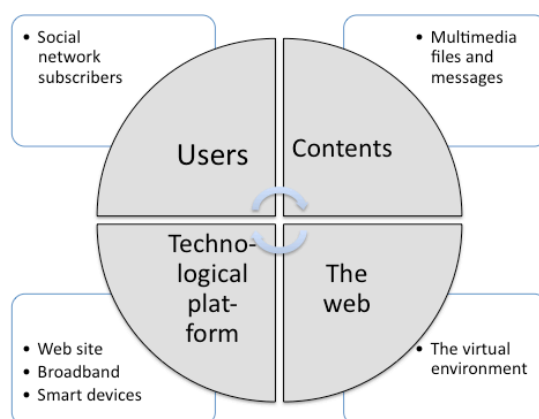
Figure 2: The main components of a social network. Source: Authors

The main components of a Social Network are very simple and are synthesized in Figure 2.

There is wide consensus on the fact that social networks may be crucial in supporting e-democracy and a better, larger participation of citizens to public government (Ampofo et. al. 2011, Millard et. al. 2012) at the local government level especially. Indeed, citizens are more involved in participating in the political debate at the local level, as they perceive the relationship with local governors, such as the mayor, the city councilmen and so on, nearer to their daily life (Rotondo and Selicato 2012, Bonson 2012).

It is therefore possible to predict an increasing role of Social Networks in Smart or Digital City programs and projects, which are strongly based on the use of high technologies to improve the quality of life at city level (Dameri 2013a). Figure 1 and 2 show that the basic components of both Smart City and Social Network have important and interesting overlapping, as showed by Figure 3.
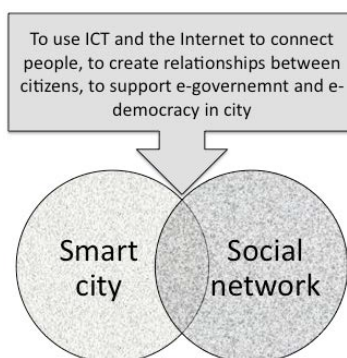
Figure 3: The overlapping area between Smart City and Social Network scopes. Source: Authors

2. Goals: why include Social Networks in Smart City initiatives

Which is the goal of a Smart City strategy? Generally speaking, it consists in leveraging all the potentials of cutting-edge technologies in order to enhance sustainable quality of life in a specific urban area. Quality of life improvement is mentioned as core purpose in almost all the most cited Smart City definitions. Sometimes, the concept of "quality of life" is explicitly referred to the citizens' perceptions (Hall 2000), but it may also, more generally, imply that the city is able to offer high-quality staying to several categories of city users such as inhabitants, workers, students, tourists (Giffinger et. al. 2007; Ricciardi and Lombardi, 2010). However, it is quite difficult to find in the scientific papers a sound and operationalizable definition of quality of life, usable to prioritize projects, to quantify expected and obtained results, to evaluate performance, to calculate the delivered benefits (Lombardi et. al. 2012).

In order to better understand the possible role of Social Networks in Smart City strategies, we adapted an international framework adopted by OECD to measure well-being all over the world (OECD 2011). In this model, it is possible to distinguish between individual and common dimensions of well-being. Individual dimensions are both material and immaterial. Material dimensions include factors such as income level, job quality, housing; immaterial ones regards factors such as health, education, social connections, civil engagement, personal security. Common dimensions of well-being, on the other hand, regard the shared aspects of living in the same city; they are based on the material and immaterial capital owned by the city, i.e. natural capital, human capital, economic capital, social capital. Figure 4 synthesizes all the main components of well-being in cities identified by this framework.

These well-being components, *per se*, are understandable at any geographical level of analysis; thus, before using the respective variables to design and manage a smart city strategy, it is necessary to confine them into the urban area and to create a link with the two key characteristics of smart city plans, and namely: high technology-based solutions, and environmental safeguard. Therefore, a smart city project seeks to improve the quality of life in a specific urban area by applying technology to at least one among the quality of life components identified above, whilst considering environmental sustainability as a priority (Setis_EU 2012).

Figure 4: The main components of well-being in city (adapted from OECD, 2011)

INDIVIDUAL WELL-BEING	
MATERIAL COMPONENTS	IMMATERIAL COMPONENTS
▪ Income level ▪ Job quality ▪ Housing ▪	▪ Health ▪ Education ▪ Social connections ▪ Civil engagement ▪ Personal security ▪ ......
SHARED WELL-BEING	
▪ Natural capital ▪ Economic capital	▪ Human capital ▪ Social capital

The use of a Social Network in implementing a Smart City could yield important synergies and benefits, especially with regard to the intangible goals of a smart program. Then, we will concentrate on the right side of the framework (Figure 4). The immaterial components of well-being can be further divided, on the basis of the processes generating them, into the two operational vectors identified in Paragraph 1, i.e. (i) *public (e-)services delivery* and (ii) *citizens' participation to political debate and local governance*: in other words, the e-government vector, on the one side, and the e-participation vector, on the other side.

As a consequence, we propose to consider three main areas in which social networks could contribute to produce higher public value from smart city projects: (1) service delivery, (2) governance participation, and (3) smartness awareness.

1. *Service Delivery*. A smart city is (also) a framework to plan, implement and deliver better municipal services, by focusing on the citizens' needs and expectations and using new technologies to increase the generated public value (Van Soom 2009, Dameri 2013c). The intervention areas may include public local transportation, energy consumption in public buildings, public illumination, real time traffic information, e-services regarding civil registry, administrative authorizations for companies, building authorizations, etc. (Schaffers et.al 2012). When a smart service is an e-service, it is generally delivered through a web site (Allwinkle & Cruickshank 2011). However, social networks are much more suitable for mobile use, and much more interactive than traditional web sites, and then may usefully complement the other channels and media. A social network may allow to easily collect the citizens' needs, comments and expectations, so that plans and projects can be continuously monitored and fine-tuned on the basis of citizen satisfaction-based criteria. Therefore, the use of social media may result in a better fit between the Smart City actions and the actual needs of citizens. Even more importantly, social networks may be leveraged to involve citizens as active players in participative service production processes. Ricciardi et al. (2013) have recently studied some pilot experiences of Citizen to Problem Solving Organizations (C2PSO) networks, where social networks (such as Twitter) enable initiatives in which citizens go beyond their traditional passive role of service users, and actively cooperate with private and/or public organizations to create or empower a specific municipal service. These experiences suggest that Social Networks may facilitate cooperative processes that overcome the traditional, top-down Government to Citizen (G2C) models in favour of more dynamic, participative models, such as that of C2PSO networks.

2. *Governance Participation*. A smart city aims also to enhance citizens' participation to the local government and political debate (Odendaal, 2003). Smart e-democracy is a means to improve the quality of life through improved quality of civil involvement and increased political participation. Social networks can boost such processes: they allow to easily link many citizens, by using a wide-spread tool which implies no technological education efforts, since more and more people spontaneously become capable to use it. Moreover, a social network is also an open platform, therefore it grants transparent opinions and information about the administrative choices and initiatives; this may facilitate a stronger cooperation between the local administration and all the stakeholders, from individuals to organizations, associations and so on (Bonson et. al. 2012, Gil de Zúñiga et. al.2012).

3. *Smartness Awareness*. One of the main difficulties faced by Smart City initiatives, especially in their initial phases, is to communicate their goals and to create awareness among citizens about the possible role of Smart City strategies in enhancing their quality of life. The reasons include the specialistic and innovative technological aspects often included in smart projects, that few citizens can understand; and the long time required to transform a smart project – and the large investments of public money it requires – into perceived benefits for people (Chourabi et.al. 2012). A social network is therefore a potentially important medium in order to both collect the citizens' opinion and develop an open dialogue between the citizens and the public administration body in charge of the smart city program (Alawadhi et. al. 2012). Moreover, a social media allows to analyse the opinions expressed on the platform and to identify opinion leaders. These tools may then be leveraged to improve communication and awareness, to fine-tune the messages being spread, and to evaluate the changes in attitudes and consensus generated by the interactions within social networks about the Smart City program (Roitman et. al. 2012, Cranshaw et. al. 2012).

This analysis helps us to understand how synergies are possible between Smart City strategies and Social Networks. Benefits are then possible, on the basis of these synergies: but what are the main costs and risks associated to the adoption of Social Networks as Smart City enablers?

3. Social Networks as Key Enablers of Smart City Initiatives: How to Identify Organizational Costs and Success Factors

Social Networks were born as peer-to-peer structures, focused on sharing information, opinions and moods. They are not conceived to enable constructive problem-solving activities. This poses a basic organizational problem when a Smart City initiative, which is by definition problem-solving oriented, plans to include Social Networks in its strategies.

In fact, transforming Social Networks into "smart" tools of value generation implies time, energies, costs and risks. For example, in a successful case of Citizen Relationship Management implemented in an Italian small city, it took three years to build the necessary back-office capabilities and procedures before launching the service through the social media, since the city managers understood that the citizens would soon abandon the channel, unless their first attempts to interact with the systems resulted in perceivable and satisfying answers, real-life improvements, or at least timely and appropriate feedbacks on the part of the Public Administration (Ricciardi et al., 2013).

In other words, the adoption of Social networks in Smart City initiatives is both costly and risky, since it can result in boomerang effects if citizens' expectations are disappointed by the social media-enabled system.

Nevertheless, the costs and risks of participatory initiatives, like those implied in many Social Network based Smart City projects, are often overlooked in practice; this inevitably results in poor success rates of such initiatives (Ter Hedde and Svensson, 2009).

The literature on Smart Cities has hardly tackled this problem. In fact, most studies on Smart Cities are being conducted by scholars who are rarely interested, because of their backgrounds, in organizational success factors, such as engineers, computer scientists, sociologists, e-participation scholars, urban and regional studies scholars (Ricciardi and Za, 2014).

A higher awareness of the organizational problems implied in Smart City initiatives is more frequent among Smart City scholars with an e-government background (Sorrentino and De Marco, 2013); on the other hand, e-government scholars are often interested in top-down approaches to government-citizens interactions, and then may overlook the participatory, cooperative, bottom-up nature of Social Networks.

Fortunately, relevant insights are emerging from other fields of studies, such as Adaptive Dynamics and Game Theories, that are providing us with valuable explanations on the key success factors of cooperative and participative initiatives. These fields of studies share a "systems approach" to phenomena, that is proving particularly suitable for the complex level of analysis implied in both Social Networks and Smart City studies.

We suggest that a promising strategy to identify the key success factors of Social Network inclusion in the Smart City agenda may consist in merging the outcomes from Game Theories and Adaptive Dynamics with the organizational theories which have proven effective in explaining some key cooperative behaviors in inter-organizational settings, such as the Institutional Theory and the Embeddedness Theory.

In fact, by comparing these diverse literature sources, we can identify consistent outcomes on success factors in cooperation-based initiatives, that are easily adaptable to Smart City programs enabled by Social Networks and Social Media. A tentative synthetic list of success predictors for Smart City Social Networks is the following:

- Resistances and conflicts among the employees and managers involved in the Smart City Social Network (for example, the Public Administration employees who are expected to process the citizens' requests from the social media) are understood and addressed before the implementation and launch of the initiative;

- The processes and procedures generated by the Smart City Social Network within the Problem Solving Organizations (PSOs: Ricciardi et al., 2013) are carefully designed and tested in advance, and appropriate resources are allocated for their implementation and operation;

- Citizens can easily perceive concrete, timely benefits from their participation in the Smart City Social Network: for example, their complaints receive feedback and the problems they point out are fixed;

- Citizens can easily perceive that the costs of their participation in the Smart City Social Network (in terms of time, efforts, risks, privacy concerns, etc.) are negligible when compared to the related perceived benefits;

- There is reciprocal trust between the Smart City Social Network actors, and the institutional management of the interactions is sound: opportunistic behaviors are spotted and punished, whilst collaborative behaviors are socially valued and rewarded.

4. Measuring the Benefits, and the Benefits of Measuring: Steps of Smart City Social Network Maturity

Is it possible to assess whether the specific use of a specific Social Network can actually benefit a specific Smart City program? This topic is very complex indeed (Lombardi et. al. 2012, De Santis et. al. 2013). A fully standardized set of performance measurement criteria has not emerged yet, and maybe will never be agreed upon, given the historical, geographical, socio-economic and cultural differences between cities.

However, the use of a social network to implement some parts of a Smart City larger strategy, as discussed in the previous paragraph, may create a set of bidirectional relationships: it becomes then possible to collect information on both the citizens' day-by-day, actual use of smart services, and their perceptions and opinions about these services. A social network is therefore not only an way to build some tiles of the smart city mosaic, but also a valuable tool to make a qualitative and qualitative evaluation of the Smart City program possible.

We propose that the adoption of Social Networks within Smart City strategies be seen as a three-steps process. We describe this process by adapting OECD S-curve model (OECD 2010), originally designed to evaluate the e-society maturity.

In Figure 6 we can interpret the OECD model S-curve as applied to the "Maturity of Social Networks adoption in a Smart City Program"; the larger is each oval, the higher are the enjoyed benefits. This model identifies three different maturity steps, called Readiness, Intensity, and Impact.
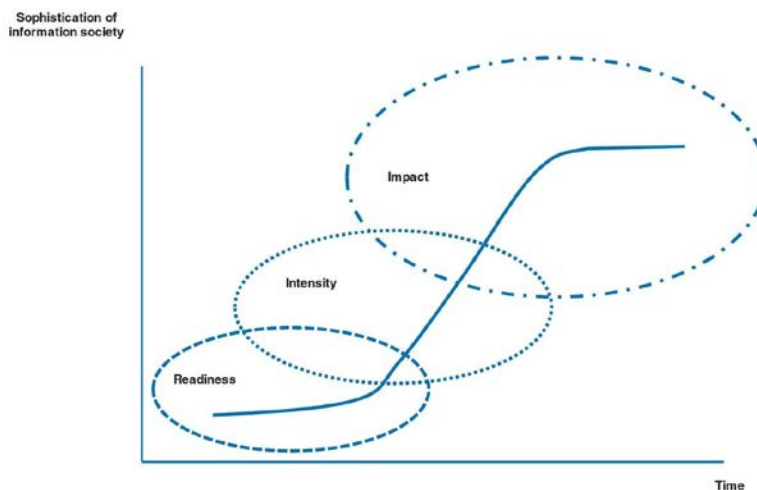
Figure 5: Assessing information society development: the S-curve model (Source: OECD 2010)

- *Readiness* identifies the extent to which a city is ready to use Social Networks to create a relationship with citizens within the Smart City program. It largely depends on the PSOs' organizational readiness, as we sought to demonstrate in the previous paragraph, but also on the technological, commercial and social infrastructure of the city. It is necessary to identify effective and context-specific proxies at the city level to measure these readiness drivers. It is reasonable to hypothesize that when the Readiness is low, the failure of a Smart City Social Network initiative is more probable.

- *Intensity* measures the extent to which a Smart City Social Network is exploited by the subscribers. It is easier to measure than Readiness, by using all the counters and quantitative analysis tools already available. Nevertheless, it is not enough to assess the actual usefulness of a Smart City Social Network

initiative, because it expresses only the potential to provide actual value through the Social Media use. It can be understood as a variable mediating the relationship between Readiness and Impact.

▪ *Impact* measures the results, in terms of improved sustainable quality of life, of using a Social Network to support the implementation of a Smart City strategy. It is hard to reliably measure the public value actually generated by such an initiative, but the joint between Smart City and Social Network approaches provides a set of technological solutions to support a veritable appraisal of this value. Indeed, applying an intelligent content analysis to the users' posts and messages, questions and answers, it is possible to conduct a qualitative analysis, through which the capability of assessing a specific Smart City's performances could be dramatically boosted. In other words, not only is a Smart City Social Network a potentially valuable solution to enhance Smart City performances, but also a hardly comparable tool in order to *measure* the most intangible, context-specific aspects of such performances.

The table in Figure 6 summarizes how we suggest to plan the measurement of benefits deriving from using Smart City Social Networks.

MATURITY STEP	GOALS	BENEFITS MEASUREMENT
Readiness	To enhance the readiness of citizens in using a Smart City Social Networks	Using context-specific proxies at city-level to measure the readiness
Intensity	To spread the more is possible the use of Smart City Social Networks among citizens	Counters and quantitative analysis
Impact	To understand the impact of Smart City Social Network on citizens' awareness, consensus and quality of life	Content analysis to the users' posts and messages

Figure 6: Measuring Social Networks benefits in Smart City programs (Source: authors)

5. Conclusions and Further Research Steps

Studies on the potential of Social Networks and Social Media for the creation of public value have been mainly conducted in fields such as e-government and e-participation so far. These approaches tend to measure performances (Sorrentino and Passerini, 2012) in terms of enhanced efficiency/effectiveness of a specific service (e-government) and enhanced civic awareness and engagement (e-participation). In this paper, instead, we sought to investigate the implications of Social Networks adoption within Smart City strategies, where performances are measured in terms of improved quality of life at the city level. We found that Smart City Social Networks imply very interesting challenges and opportunities in terms of mutual understanding between citizens and government and in terms of organizational issues.

We then concluded our exploratory study by proposing a set of success factors and a three-steps model for the adoption of Smart City Social Networks. These outcomes are suitable for further fine-tuning in theory building and then for theory testing, preferably through longitudinal studies. This may allow the build-up of sound guidelines for the adoption of Smart City Social Networks; in fact, such guidelines are today missing, although strongly needed by the world of practice.

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Conceptualising Brand Consumption in Social Media Community

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Abstract: The emergence of social media is challenging the conceptualization of the brand. This paper develops a conceptual model of the consumption of brands in *Social Media Community* (*SMC*). The research triangulates a social media focus group and face-to-face interviews. This study identifies five core drivers of brand consumption in a *SMC* articulated in the Five Sources Model. Managerial implications are discussed.

Keywords: brand, consumption, focus group, interviews, motivation

1. Introduction

The population of social networks users is approximately 1.43 billion and growing (eMarketer, 2012). Social media has had a major impact on business, transforming consumer behaviour, relationships and traditional brand practice (Sands etal, 2011; Corstjens and Umblijs, 2010; Hennig-Thurau etal, 2010). Consumers possess unlimited opportunities to engage with brands. The results of this increased brand access mandate changes in branding strategies towards engagement platforms (Verhoef etal, 2010). Social media demands new best practices, rejecting the brick-and-mortar approach (Naylor etal, 2012). Hence, understanding brand consumption in a *SMC* demands a shift towards the customers meaning of a brand in a community collective context in which consumption value is stakeholder driven though dynamic social interactions and the co-production of shared meanings. (Vock etal, 2013; Merz and Vargo, 2009). Brand communities in social media have positive effects on the brand such as shared community foundations and value creation processes (Ellahi and Bokhari, 2013). This continuous process of re-productive consumption intensifies the intangibility of the brand and ambiguous positioning (McDonald etal, 2001, p.345). Consumers are transformed from silent individuals to a loud unmanageable community of stakeholders that create and exchange content democratically, in cluttered, excessive spaces (Vanden Bergh etal, 2011; Reyneke etal, 2011; Libai etal, 2010) where real-time accessibility and exchange are a social norm (Hennig-Thurau etal, 2010). Despite the unique challenges, few models exist that explain the role of the brand in *SMC*. As a result, marketers have had to impose traditional rules in brand communities. Like a large echoing room full or shouting people, this has created a torrent of continuous organized chaos that makes up brand consumption in the *SMC*.

Therefore, we pose the following research question: <u>How are brands conceptualized in the consumption of *SMC*?</u> In this study the practice of consumption plays an important role in a consumer's everyday existence and reality. Hence, our definition of consumption is based on Holt (1995): consuming is comprised of structure and purpose. In this way consumption encapsulates the unique characteristics of the two mediums; brand and social media technology; structure of consumption is both brand and community and purpose of consumption for the individual oneself as well interpersonal interactions with community (Campbell etal, 2011). In the following section we review prior literature on the *SMC* and brands. Specifically addressing unique aspects of the brand, the next section describes the method. The remainder of the manuscript lays out the resulting framework and model that will inform the discussion and the practitioner implications. The main contribution of this paper is two-fold. This research establishes new empirical evidence and begins the process of conceptual model development grounded in consumer evidence.

2. Defining Brand Community

The conceptualization of community has a long history in sociological, cultural and communication research (Peck, 1992). Often the term is applied to almost any group of people, regardless of online or offline context, where the type of bond between the stakeholders defines the community. The idea of a consumption community arose because consumers have shared feelings and activities in the consumption of common objects (Friedman etal, 1992). For example, Macintosh, Harley Davidson and Star Trek. Muñiz and O'Guinn

(2001) define communities as a human consumption context: members are non-geographically bonded and their structured social relationships are defined by shared morality, consciousness, rituals and traditions. Schouten and McAlexander (1995) argue that these relationships help to form consumption subcultures to meet specialized needs (Fournier and Lee, 2009): communities as linking places or communal affiliation (Cova, 1997).

Often consumption resolves around the brand: a human affiliation in which a shared passion or interest toward a particular product, service or consumption activity unites the members. Bonded by specific interrelations, brand communities are 'psychically' connected (Bagozzi and Dholakia, 2002). Brand communities help members satisfy functional or emotional needs (Murray, 1991). In recent years social media allows for instant personal interaction between the brand and its community (Nambisan and Watt, 2011). The ease of participating in online social communities removes both the physical and temporal barriers, increasing the likelihood of participation from consumers who may not have been able or inclined to do so previously. For product brands, this enhanced interaction capability is an efficient way for users to share their experiences and opinions of the brand. For brands, their inherent intangibility adds to the potential for community members to actually shape the brand offering and impact other users' interpretation of the brand. Brand consumption in a social media context enhances previous work that defines brands: a promise (Berry, 2000), a process (Merz and Vargo, 2009; De Chernatony and Dall'Olmo Riley, 1999), a relationship partner (Fournier, 1998), a fulcrum of experience (Prahalad and Ramaswamy, 2004; Davis etal, 2000) and a performance (Rahman etal, 2009). The common theme of these descriptions is the concept that the brand is the outcome of the interactions between the brand and the consumers (De Chernatony and Dall'Olmo Riley, 1999 Berry, 2000). Interactions that is interactive and value, co-created. (Merz and Vargo, 2009). Hence, social media may amplify the brand's role in community consumption.

The ease of participating in an online community may increase the diversity of its community members. Bagozzi and Dholakia (2002) posit that virtual communities lower the importance of members' social characteristics, physical appearance and nonverbal expressions, but elevate the importance of content and freedom to express. Some consumers may be avid users who would take part in the community even if the barriers to participation were higher, but others may be less interested in the brand and want other benefits from their participation. It could also be so that the moral responsibility and social ties that often characterize face-to-face communities may decrease in an online community (Bagozzi and Dholakia, 2002). It is posited that social media brand consumption is devoted to specific commercial or informational objectives rather than social responsibility and mutual support. Cova and Pace (2006) agreed and concluded that consumption is the personal self-exhibition of brand rituals in front of other consumers.

However, little work has been done to conceptualise the social media brand. Therefore, to address this deficiency, we then progress to describe our methodological approach to explore how brands are conceptualized in the consumption of *SMC*.

3. Method

The methodology employs two qualitative approaches in triangulation to explore and conceptualize brand consumption in a social media community. The research takes a grounded theory method, triangulating an online Facebook focus group with offline interviews between March and May 2012 (Wunderlich etal, 2013; Corbin and Strauss, 1990). Data collection placed the consumer at the focal point of an emerging conceptual model (Cooke and Buckley, 2008). The focus was on the consumers' narratives of their brand experience (Thompson etal, 1989). Eight consumers made up a closed Facebook group with the researcher serving as facilitator. The call for research participants was posted in the researcher's personal public profiles and also advertised through Facebook and Twitter accounts of some New Zealand companies. The group was evenly divided in terms of gender, with ages ranging from 36 to 64. Most participants resided in Auckland. All participants were college or university educated, had part-time or full-time positions as specialists in different industries. All participants followed product and service brands in social media with varying degrees of commitment. The online focus group allows for participation, anonymity and accessibility (Gaiser, 2008). Fifteen face to face interviews were also conducted. The interviews took 1 hour and verbatim transcripts were prepared for analysis. Interview participants of equal gender resided in Auckland and ranged from 25 to 55 years of age. Data analysis followed a process of content analysis (Miles and Huberman, 1994). The process allows a comparative thematic coding structure to emerge. The first set of codes was created using data from

the Facebook focus group. Then, these themes were tested against data derived from face-to-face interviews. At this point, the common categories were identified and coded. The coding continued until the main themes of brand consumption were developed.

4. Findings

4.1 Functional Consumption

Consumers consider social media to be a platform for addressing problems when other communication channels are unavailable or unsatisfying. Consumers value the functional benefits of being able to interact with brands via social media. Consumers consume brands with five primary functional motivations in mind (Aksoy etal, 2011); to solve problems, to send specific inquiries, to search for information, to evaluate the service before purchasing, and to gain access to a brand's special deals and giveaways. Participants' stories about their memorable experiences with brands often refer to service functionality, and particularly to problem solving. When participants were asked in what case they would contact a brand using social media, many of them agreed that scheduling an appointment or sending inquires would be one such case. Some of these consumers would never have contacted a brand via social media unless certain problems had occurred. Consumers often begin engaging with a brand when they experience service failure. Consumers also report an expectation that brands will provide them with regularly updated information such as useful tips, new knowledge and information about the service offering. Consumers often connect the need for information with the possibility of learning something new about the brand. Accordingly, a lack of expected information can negatively influence the consumer's impression of the brand itself. Some consumers utilize social media to provide brands with feedback regarding their experiences, publically expressing what they think about service quality (Ellahi and Bokhari, 2013), brand initiatives or even advertising campaigns.

Consumers point toward social media as a shortcut for addressing their emerging needs. Some consumers prefer social media interactions with businesses to phone calls or offline meetings. Evidence shows that consumers use brands' social media channels not only to evaluate, for example, service offers via other consumer's opinions and interactions but also to gain tacit knowledge through personal experiences before making a purchase decision. Participants consider social media a tool for researching a brand. Asked how she would feel if business pages disappeared from social media, one of the interviewees was emphatic. For some consumers their interest in a brand's specials, giveaways and gifts is a primary motivator for social media interaction (Parsons etal, 2014). In exchange for giveaways or discounts, these consumers are willing to participate in brand activities such as contests and opinion polls. Other participants report that possible rewards are the only reason they engage with a brand via social media. Engagement with brands in social media enables consumers to stay informed about a company's deals and giveaways and participate in brand activities as soon as they become available. The findings demonstrate that such reward-focused communications with brands can actually lead to the beginning of a new relationship. These interactions allow the consumer to gather information about the brand and its product offering, gain useful information, and see how the brand treats its customers. In this respect, the consumer's impression of the brand may often depend on how easily they can access the information they require or reach the company's experts.

4.2 Emotional Consumption

The emotional connection to the brand reinforces the enjoyment of interactions. The three most common emotional motivations include; alleviating personal problems or situations, feeling privileged, recognized, and valued by a brand, and escapism and satisfaction of curiosity. Participants in the Facebook focus group were asked to choose a few images from some randomly selected images that reflect their experiences with specific brands via social media. The findings illustrate that participants give great weight to pleasant brand experiences. One participant chose a picture of a rock musician performing on stage in front of a large audience. Involvement in the co-creation of service offerings produces feelings of enjoyment for some of the participants. Interaction with other community members is another source of enjoyment for some consumers. Their support provides a form of community value. Consumers also consume brands in a *SMC* as a form of entertainment. Conversely, the data indicate that lack of enjoyment and entertainment in brand interactions may actually result in on-off consumption encounters with a brand. Because consumers are situated in concrete every day contexts, the way they consume a brand does not just reflect these contexts because it is also formed by those contexts and situations. *One consumer* who immigrated to the USA several years ago stated that her connections with NZ Herald or Air New Zealand through Facebook help her to feel emotionally

close to her birth country. In this respect, the brand acts as a proxy to support the consumers' own gaps and insecurities in her personal life. For others, connections with brands and other people via social media can help to overcome personal obstacles. For instance, one participant emphasizes that going social made him feel more confident and conversational.

A consumer's consumption of a brand can evolve out of a variety of emotional experiences within a *SMC*, and some of these experiences are deeply rooted in personality traits or motivated by personal circumstances. Consumers tend to believe that brand consumption can create some sort of personal advantage and feeling of privilege or recognition by a brand. These emotional benefits enhance the brand experience for the consumer (Padgett and Allen, 1997). This finding highlights the importance of two-way communication. Some consumers report that a sense of escapism accompanies their social media interaction with brands. These consumers often want to find experiences that on the one hand serve as the opposite of reality and on the other hand reflect a desired reality. Some forms of escapism can create emotional experiences for consumers by reflecting their aspirations. The consumers' involvement with a brand often begins with curiosity and is fuelled by the experiences and knowledge that they develop through subsequent interactivity with the brand. The proximity of brands and consumers within social media has turned online communities into interactive showrooms freely available without time and location constraints. As a result, consumers are motivated to research and explore brands, often out of mere curiosity. On the other hand, if a brand arouses curiosity, there is an opportunity for creating repeat consumption, as the consumer wants to maintain a connection and learn from personal experiences about the brand evolution. In the context of social media, curiosity is a challenge for brands and a driver of consumption, as there is always something consumers want to find out. The findings suggest that emotions created by engaging and entertaining social media events may enhance consumers' hedonic experience and bring about a positive reaction to the brand. At the same time, a lack of enjoyable or entertaining experiences may result in weak or even negative consumer-brand consumption.

4.3 Self-Oriented Consumption

The theme of self-oriented brand consumption replicates some of the functional and emotional elements, but it varies because of the emphasis on the consumer's lifestyle and the goals that facilitate that lifestyle. Three primary motivators contained in this core value include; self-actualization, self-perception enhancement, and self-branding. Consumers often seek self-actualization in their experiences with brands and other consumers in a *SMC*. For some participants social media present new opportunities to consumers to realize their personal potential through brand-related activities. In this regard, consumers take a very active role, encouraged by a network-oriented medium. Consumers value the ability to express themselves and share their endeavours or ideas through brand interactions. This enhances feelings of self-worth and makes the experiences valuable. Stressing the importance of authenticity, consumers tend to engage with a brand if the brand's symbolic meanings are congruent with their sense of self (Schouten, 1991). If consumers perceive a brand's symbolic meanings, as enacted in a *SMC*, to be relevant to their personal values, interests and beliefs, then they are more likely to consume the brand's social media. A sense of self-relevance creates a strong affiliation with a brand.

Professional responsibility represents a motivation for some consumers, who feel their career goals are enhanced through their interaction. Consumers may negotiate the brand's relevance to themselves. One informant reports the personal relevance of the service portion of a product-related business. The consumer's brand preferences in social media are convertible, dynamic and unstable. The brand may fail in the self-relevancy dimension, but it still creates a connection with consumers through interactivity and co-creation. However, consumers search for brand experiences that resonate with their interests and values. Self-branding in this context is characterized by the consumers' actions that are undertaken to build their social self-identities through different brand activities, including brand endorsement and brand affiliation. By publicly showing their affiliation with certain brands, consumers differentiate themselves while indirectly giving their followers an idea about the knowledge, expertise, skills and interests they want to be known for. Such consumer interactions contribute to the construction of a consumer's social self. Additionally when brands assign the role of product tester or a reviewer to a consumer, other community members may perceive this person as an expert in the field. Participants also demonstrate a need for brand experiences that help to facilitate, optimize and manage different daily tasks. In this regard there is an overlap with the functional and emotional aspects of brand consumption, as consumers use a brand's social media applications as tools that facilitate their daily activities. Obviously, the integration of social media in consumers' lives signifies a general

shift in their consumption activities. Consumers need experiences that help to manage the daily tasks that are related to their personal or professional life. In this respect, the need to simplify or facilitate day-to-day activities serves as a driver of consumption in social media and adds overall value to the consumption process.

4.4 Social Consumption

The literature highlights the social aspect of consumers' participation in a *SMC*, but the data suggest specific functions that compose social value for consumers. These include; experience exchange, community attachment, building links, and social interaction. Consumers use social media to share their personal brand experiences with others, and they are willing to broadcast their consumption activities and experiences not only for their own benefit, but also for the benefit of others. We anticipated that consumers would pay attention to which businesses their friends like or follow in social media, but they don't. Whereas some participants follow their friends' recommendations even if the brand is outside their personal or professional interests, others are sceptical about the influence of social media word-of-mouth. Consumers tend to rely on certain people's opinions, indicating the sense of community attachment that can evolve. And some informants specifically report that consumption maintenance is a determinant of how they choose to interact. Despite the varying opinions regarding the value of friends' recommendations, almost all participants agree that public opinion plays an important role in the evaluation of a brand. Some participants articulate the social importance of being able to engage with a brand community. They are often motivated by the notion that social media give them a chance to be heard. Link building and networking for professional or personal purposes have also evolved as an important part of brand consumption in social media. Consumers appreciate the opportunities for developing new consumption experiences through brand affiliations in social media, while others are likely to limit their communal ties to the social media context. Consumers generally recognize the networking benefits of being engaged in a brand community. The consumption of brands through the connection with others may also foster and support other activities. Consumers sometimes use brand communities in social media to experience social interaction with other consumers. The findings suggest that consumers' communal experiences do not necessarily imply an attachment to the brand community. Nevertheless, being involved with a brand in social media means that consumers read and post comments, repost and retweet the brand's links and photos, ask questions, address personal problems, provide feedback, share experiences and build networks. Often these consumption practices are motivated by the consumers' need for socializing with other members of the *SMC*, which makes them feel as if they are a part of something tangible. Can a brand bring consumers a sense of community and add value to consumption via social media interaction? The way consumers bond with brands in social media is in many ways shaped by their communal experiences. Through participation in brand communities and networking, social connections between consumers and brands add value not only to brand experiences, but to the consumers' lives as well.

4.5 Relational Consumption

The relational core value describes the consumers' desire for interaction with the brand on a human level. The value is characterized by three motivations; co-creation of the service offering, the desire for personalized brand interaction, and the desire to know the real people behind the brand. The "human" touch is an especially important dimension of the relational aspect of brand consumption. Personalized interactions may lead to greater expectations of the brand experience. Social media enable a shorter distance between consumers and brands, creating the notion that there is always someone who listens and can fix a problem. Brand experiences in social media hold the promise of a personalized conversation with the brand. From a consumer's perspective, brands become close and real in social media. Consumers expect brands to be present in a *SMC* so that they can continue offline conversations with them online. Personalized communications from a brand and the possibility of being engaged in the brand's daily activities are two important elements of the relational aspect of consumption. Co-creation gives consumers relevant brand experiences and potentially adds value to consumption. The relational motivation for brand consumption is unique in that this particular motivation seems to define the overall consumption relationships that the consumer has with the brand. Several types emerged from the data that are consistent with Fournier (1998).

Fickle Relations describes rather unstable, demanding and volatile consumption relationships that vary, based on the consumer's most recent interaction with the brand. It is not surprising that consumption is often influenced by the quality of their current brand experiences and also by the degree of brand relevance. Relational bonds between consumers and brands could also be derived from statutory obligations, not because they are planned or wanted. Obliged Relational Bonds describes the consumption type of some

participants who feel that they are forced to keep in touch with brands, such as banks and telecommunication services. While these respondents do choose to interact with services in social media, they tend to resent being forced to utilize the social media channels in order to receive the service they require. Statutory obligations seem to have a particular effect on some consumers' attitudes toward brands in a *SMC*. Even though consumers might have long-term relationships with the brand, they prefer to have brand communications offline. Despite the lack of emotional or self-brand ties, obliged consumption can still bring about value associated with service functionality by providing consumers with convenient and accessible experiences. Pre-Existing Relations describes consumption by consumers who choose to engage in *SMC* with brands because they are already quite happy with the brand and its offerings. This often evolves into online advocacy while the social media interaction enhances the existing relationship and brand experience. Social media community participation can enhance pre-existing relationships through visualization and reinforcement of the consumer's previous brand experiences. But social media may also allow consumers to form new brand relationships, often in response to their friends' recommendations or a direct invitation from a brand to join its brand community.

Relational bonds that arise in social media without the support of previous offline experiences are identified as Emerged Relational Bonds. Consumption relationships that have emerged for the first time in social media may be characterized by a low degree of self-relevance, so the mode of brand interactions is fleeting and somewhat insignificant compared to pre-existing relational bonds. Data also illustrate that if a new brand is congruent with the consumer's interests, the newly emerging relationships may be developed further and lead to liking, interactivity and co-creation. The intensity of brand-related communications in social media to a large degree is dictated by the nature of the service and is often oriented toward the consumer's utilitarian needs. In this respect, consumer relationships with a brand are shaped by the frequency of service usage, regardless of offline or online context. Casual Relational Bonds are defined by irregular interaction with the brand. Even though the nature of some brands implies casual relationships, social media may shift the focus from the functional aspect of consumption and direct it toward the satisfaction of the consumers' utilitarian, social and emotional needs, thus creating stronger relational bonds.

Regardless of the consumption type, consumers do not want to interact with a faceless organization, preferring instead to know the real people behind the brand. Moreover, consumers want to establish a close contact with brand representatives or experts in social media even if that contact is utilitarian and brief. The consumers' discourse with the brand and the co-creation activities form a bridge that builds relational bonds.

5. Conceptual Model

The study develops a conceptual model of brand consumption in a *SMC*. This is called the *Five Sources Model*. Each of these core drivers represents unique opportunities for brands to enhance the relationships. Based on the importance that consumers place on the meeting of their functional needs, managers should constantly monitor their social media communities for inaccurate information placed by both well-meaning and ill-intentioned posters. If consumers are seeking information and answers to their service-related questions, bad information could easily taint the relationship between consumer and brand. Few respondents indicated that they distinguish between marketer-provided information and that provided by other consumers. In fact, a large number of participants indicated that they place a great deal of value on the opinions of virtual strangers. Considering the relevance of emotional needs for many of the brand consumers, managers also need to focus on the way their social media communities make the consumers feel when they are participating. While few marketers would leave the appearance of their brand's website to outsiders, it is exactly these outsiders who often determine the feel of a brand's social media sites. If consumers come to these sites not just for information but also for escapism, then a sense of play should be built into the sites when it is appropriate to the brand's intended image. Well-monitored social media provide marketers with amazing opportunities to quickly respond to individual consumers' posts and comments with highly personalized content. To write off this capability as too time-intensive is to ignore a core reason that consumers choose to relate with a brand. It also risks losing that consumer to a more responsive brand.

Participants provided self-oriented reasons for interacting with brands online, but the depth of their sentiments in this regard was a novel finding. Managers should be aware that consumers often display their brand affiliations as a signal of their identities. The proactive marketer will make this easier for the consumer by providing ample opportunities for the consumer to identify with other respected brand users. Having

carefully selected celebrity brand ambassadors make occasional posts and interact with the *SMC* would be an excellent way to enhance consumers' impressions of the typical user. Enabling effective self-branding via the online community would also be as easy as inviting especially prolific posters to contribute to the brand's actual website or e-newsletter, or inviting them to participate in new product launches. Socially motivated interaction should also not be a surprise, given the nature of social media. Effective targeting of this core value could include creating online brandfests that occur in synchronous real-time, bringing all *SMC* members together with the promise of prizes and opportunities to meet and interact with like-minded others. Forums that encourage usage stories and service feedback could serve the dual purpose of providing the brand with valuable insights into the parts of the service experience that resonate with their customers as well as giving consumers the opportunity to bond with each other. As with any social media forum, it would also be beneficial to have a strong brand presence in the forum as a moderator to ensure that the interaction is positive and the participants feel safe and know they have been heard. The relational motivation for brand consumption in a *SMC* presents marketers with some unique challenges. As this need tends to define the relationship that the consumer has with the brand, it is important for the brand to allow the consumer to feel like a vital part of creating the brand while still maintaining control over the integrity of the brand. Effective management of this core value should involve more than just the brand's communications team, who should bring in the voices of employees from all levels of the organization. Too often, brands only include the voice of the CEO or other highly visible employees in their social media interactions. The participants make it clear that they want to know the real people who make the brand what it is.

6. Conclusion

The study indentified five aspects of brand consumption, which overall represent the strategic directions for branding in social media. The findings speak that the opportunities provided by social media are focused on consumer engagement in terms of four characteristics: synchronicity, two-way dialogue, contingency and user control (Davis and Sajtos, 2008). In this respect, marketing practitioners should seriously consider the role of social media in creating a meaningful set of references for consumers. For instance, it may be important to couple social media channels together, so that consumers can fully experience that meaningful connection to the brand and community. In conclusion, the research has developed a conceptual model of social media branding that may have significant practical implications for business.

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How to Develop Social Media Skills in Vocational Education

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Abstract: The appropriate use of social media is an important multiplier for transporting information efficiently; either for education as for communication purposes. Hence, particularly the e-learning community would benefit from tools that assist media usage, both from a teacher and a student perspective. Information sharing and co-creation changed the shape of collaboration in the web. All these influences make the right use of social media a complex topic (e.g. usage rights, finding the right media for the appropriate channels or target groups, etc.). Simple media search is not enough, as competence-related knowledge is crucial to use social media in the most effective way. This paper analyzes this problem field from a design science perspective and derives requirements for an appropriate recommender system which fosters the social media skills of all stakeholders in vocational education such as trainees, teachers, trainers and personnel developers. It presents the design of an IT-based tool that supports users through the integration of media education into vocational education and professional qualification. The tool provides users recommendations about appropriate media contents under consideration of each individual's social media skills. The main goal is to improve the competencies of trainees and trainers in dealing with social and digital media. The tool makes an important contribution to strengthening the learning capacities of each individual and involved training company in vocational education and training through context-sensitive and individually tailored recommendations (e.g. training programs, tools, concepts / methods of education or teaching scenarios). In a first step, the knowledge space is being explored for the resulting concept. Potential use case scenarios show how the recommender system can foster the social media skills of all involved stakeholders of vocational education and training.

Keywords: Personalized learning, recommender system, social media skills, decision support.

1. Introduction

The last decade has been characterized by a strong establishment of digital and social media in many settings of private and professional life. The educational sector has become aware of these developments and the potential that comes along with collaborative creation and sharing of innovative teaching practices (Larosiliere et al. 2013). These potentials are also identified as key challenges for innovations in the educational sector these days (Koper & Tattersall 2005; Carroll et al. 2002; Agostinho 2008). Students' use of social and digital media has been continuously increasing in the last years (McHaney 2011). However, in the educational context, teachers still remain the main adopters (Pelgrum 2001; Kebritchi 2010). Even though most students are familiar with the use of social and digital media, they often show a lack of competencies when it comes to integrate them in the professional context (e.g. competently commenting on a blog entry or on other information in the web). The main reason therefore is that the training of social media skills is not yet sufficiently integrated into the processes of vocational education.

We describe the ability of professionally integrating social and digital media in vocational education according to four facets: the ability to *understand and rate information*, the ability to *select and manage information*, the ability to *communicate and comment information* as well as the ability to *create and edit information* (Oloff et al. 2013). Hence, an efficient adoption of social and digital media in the educational sector can e.g. be characterized by being able to use social and digital media to search for the right information to solve a task in the learning context. Once having found the right information, it would be helpful to use social media tools like bookmarking services to manage the relevant information. Another application potential that comes along with the professional integration of social media in teaching and learning scenarios is the possibility to get in contact with the right contact person that is helpful in the current step of the teaching or learning process (e.g. in terms of a preparation of a lesson or a presentation).

Current studies show that research in the educational sector focuses on more effective and systematic ways to represent teaching guidance and practices in terms of sharing and reuse of media contents (Marjanovic 2013; Agostinho 2008). The main challenge remains the efficient integration of social and digital media technologies in the professional setting of vocational education. Particularly learning scenarios would benefit from a professional integration of media technologies such as references to social web tools or further information in the web that may be helpful to carry out a specific task (Bandura 1977; Laufgraben & Shapiro 2004). Educational qualification in most cases is characterized by conservative educational methods which are very

formal and presence-based. The right use of social and digital media is hardly taught in the educational context as many curricula assume that students are familiar with the right use of social and digital media.

This paper presents exemplary use cases for a professional application of social and digital media in teaching and learning scenarios of vocational education and training. These use case scenarios serve as a starting point for the implementation of a recommender system for vocational education that supports teachers, trainers and trainees to professionally integrate social and digital media in their teaching and learning processes. The main goal of the recommender system is to individually foster the social media skills of all stakeholders in vocational education. The research questions are:

- How can social and digital media be efficiently integrated in vocational education and training on the job?

- How can the social media skills of all stakeholders of vocational education and training be fostered?

To answer these research questions we develop a recommender system that automatically adapts to each individual's social media skills in the teaching and learning context.

In a first step, the research method is explained, followed by an analysis of already existing recommender systems in the learning and organizational context in Chapter 3. Chapter 4 presents the domain ontology which forms the basis for the derived use cases. It depicts all relevant relationships in terms of content, users, social media skills and educational contents that are taught in IT based professions in Germany. Chapter 5 presents two use cases scenarios that are going to be supported by the recommender system. The paper closes with a summary of the main results and an outlook on future research.

2. Methodology

The research work conducted in this manuscript follows a design-oriented methodology which focuses on the artificial creation of innovative artefacts (Hevner et al. 2004). These artefacts can be classified into constructs, models, methods and instantiations. IT trends such as social and digital media have an impact on already existing artefacts. Hence, these new trends facilitate the design of new artefacts. This paper presents a collection of ideas for new artefacts and explains considering Hevner's (2004) guideline "Design as a Search Process", according to which different alternatives for artefacts or artefact designs are being analysed in their problem environment (Hevner et al. 2004). In order to enhance the rigor of the use case approach, the case studies by Dubé and Paré (2003) have also been considered. The case study research strategy represents a qualitative research method (Benbasat & Goldstein 1987). The information needed for the derivation of the use cases has been collected according to (Benbasat & Goldstein 1987; Bouchard, T. J. 1976; Cook & Campbell 1979) by carrying out several interviews with stakeholders from vocational education and training.

This paper serves as a starting point for constructing new IS artefacts based on social and digital media principles. The presented use cases have already been evaluated in practical context to proof their practical relevance. According to the carried out evaluation of the derived artefacts, irrelevant artefacts have been segregated. The remaining constructs are going to be transferred into methods and implementations to be applied practical context.

3. Recommender Systems in Vocational Education and Training

Several tools and research projects about recommender systems in learning and working scenarios have been analysed according to the criteria of social and digital media as well as fostering social interactions and collaboration.

A holistic model for continuous learning by reflection and an "AppSphere" are developed within the research project MIRROR. The AppSphere enables employees to continuously access real-time learning applications which are helpful to carry out current tasks (Balzert et al. 2011). The goal is to motivate employees to reflect their operations to foster learning from experiences. In doing so the development of creative solutions for current problems that occur in day-to-day work is fostered. Hence, employees benefit from their own experiences as well as from the experience of their colleagues (Balzert et al. 2011). Martin, Boticki and Jacobs (2010) present a framework for a mobile application enabling collaborative learning. One of the features of the framework is the integration of external communication platforms like blogs or wikis. The purpose of this platform is to foster the communication of users in learning scenarios. Within the project GRAPPLE a learning environment has been developed which supports "lifelong learning" by a technology-based environment which is capable of adapting to the user's personal preferences (Loos et al. 2010). Lee, Kim and Lee (2010) propose an architecture for a social learning platform which is based on collective intelligence models. It

consists of four modules, gathering metadata for contents and users, structuring metadata and relationships between contents and users, visualizing the results and mining knowledge from the users' learning activities. The platform tries to promote the collaborative process by summarizing the knowledge of the different users in a map and visualizing it. The platform APOSDLE supports learning in the context of the current work environment by providing users learning contents, guidance and expert advice (Lindstaedt et al. 2005). Wang and Ng (2012) propose a mobile cloud learning system which promotes collaborative learning and communication of learners in different ways. It provides a question and answer system, which enables users to ask or answer questions of other users. It also provides recommendations for learning groups. Similar users are grouped based on their learning behaviour and have the possibility to collaborate. Users can also upload content to the system and share it with other users. The system automatically builds learning plans for a user based on his learning history. Du et al. (2013) propose an interactive and collaborative learning platform which integrates social software. Users interact and collaborate in course groups and also have a personal network of friends. When a user collaborates with other users in a course s/he can connect with those. User can receive various kinds of information about members of his/her groups and friends. Users can upload, comment, tag or share content. The system also recommends users and contents to users that may possibly be interesting to them. TEDEd (2014) supports teachers creating their lessons by the help of videos on Youtube. In doing so, teachers can enhance relevant videos (e.g. by adding information or questions) and share them with students.

The state of the art analysis on recommender systems in the educational and organizational context has shown that so far there is a lack in recommending contents to users under consideration of the current situation in the teaching or learning process. Furthermore, none of the analysed tools supports recommendations under consideration of each individual's social media skills. None of the analysed tools and projects considers the field of vocational education and training.

4. Knowledge Base

To be able to derive recommendations about appropriate social and digital media contents that foster the social media skills of all stakeholders in vocational education and training, we need a knowledge base that depicts all relations of the underlying domain.

The following figure depicts the knowledge base that has been derived for the recommender system. It is modeled as an OWL ontology, which is in line with previous approaches, where ontologies have been proposed for representing learning object content (Verbert et al. 2006) and context information supporting adaption and personalization (Jovanović et al. 2007; Martín et al. 2006; Siadaty et al. 2008). It represents all relevant information about the integrated content, learning fields of vocational education, social media skills (Oloff et al. 2013), users' interactions, learning processes and social media channels in their semantic relations.

The ontology is embedded in the recommender system. Hence, it evolves over time based on the usage behavior, such that search and recommendation results will continuously adapt to user preferences.

The ontology is grounded on several already existing ontologies such as ALOCoM (Abstract Learning Object Content Model) (Verbert et al. 2006) and FOAF (Friend-of-a-Friend) (Graves et al. 2007). The ALOCoM Ontology is a formal representation for learning objects and their related components (Verbert et al. 2004). It describes how learning objects can be reused (Verbert et al. 2006). Concepts that have been taken from ALOCoM are ContentFragment and ContentObject (see Figure 1). FOAF provides a machine readable model of Social Networks. If several FOAF documents are published in the web, these documents can refer to each other, thus creating a network of people. Hence, relationships between persons can be analyzed and visualized (Sleeman & T 2010). Concepts that have been adapted from FOAF are foaf:Person.

In parts, we built an upper-level ontology to integrate the description of learning objects and their contents as specified in ALOCoM to associate them with the person-specific information from FOAF. The novel concepts for tasks, skills, interactions and media containers support the specification of new custom concepts. The concept of content objects is composed of single content fragments (media objects such as video, text file, image, etc. as well as the content object category which supports to classify content objects according to specific criteria (training material, field reports, Web resources, etc.). Based on the ontology, users can actively search for content objects, and content that matches their current situation in the working process and their personal profile is proactively recommended. The content objects are organized in media containers which consist of the components My Media, Catalogue and Learning Area. A task is related to a specific topic in the curriculum of vocational education and training (e.g. "requirements analysis" within the apprenticeship of "Qualified IT specialists"), which requires specific skills. The chosen approach enables the seamless integration

of content from repositories supporting ALOCoM or FOAF. A task is related to a specific topic in the teaching and learning and teaching process which can be subject-related or non-subject-related. If a topic is subject-related it is classified to a learning field of vocational education for "Qualified IT specialists". In total, there exist eleven learning fields. A "Contentobject" describes the different types of digital media and social media channels.

Figure 1: Domain ontology of the recommender system

The ontology evolves over time and reflects the dynamics in the user's individual learning process as well as the continuously changing amount of relevant information. A dedicated knowledge adaptation component uses techniques of ontology learning and ontology evolution to adapt the ontology over time (Di Valentin, Emrich, et al. 2013). This could either be triggered by the indexing of new or updated content or the analysis of usage data.

5. Derivation of the Use Case Scenarios

This chapter presents exemplarily use cases scenarios that are going to be supported by the recommender system. First the task to be carried out by the teacher/trainer or trainee is explained followed by a sequence of actions. For each use case, several success criteria as well as exemplarily recommendations for professionally using social and digital media is given. The use cases have been derived in a workshop with teachers, trainers and trainees from vocational education in the IT sector.

5.1 Integrating Social Media in the Preparation and Execution of Lessons

A teacher prepares a lesson within the learning field "Basic IT Systems". S/he plans to integrate social and digital media in his/her lesson but has no experiences in doing so. S/he first wants to find out which application potential exists.

The teacher logs in to recommender system. The system recognizes whether the user is a teacher/trainer or a student which is considered for the generation of search and recommendation results. Based on previously carried out interactions within the recommender system such as search requests, upload of contents or clicks on certain items, the system recognizes current topics in specific classes at the vocational school. The recommender system provides the teacher information through a recommendation widget that matches to his/her individual interests and the context in the process of lesson preparation. In addition to the

recommendation widget, teachers can also submit search requests (see Figure 2 and Figure 3). Search requests as well as recommendation results take into consideration the user's personal profile which can be explicitly indicated by the user during his/her registration. The profile enriches implicitly based on the usage behavior (see the concept "interactions" in Figure 1). Hence, the more user interactions are carried out within the recommender system, the more information can be gained to enrich the user profile and adapt recommendations to each individual's social media skills (Schmidt et al. 2014; Di Valentin et al. 2013).

Furthermore, the teacher can create private learning areas and share them with their classes. Hence, teachers are enabled to upload and manage information online and share specific contents with their students/trainees. These learning areas can also be shared with trainers in the companies to enable a continuous coordination between vocational school and training companies.

Exemplarily recommendations could be links to web resources such as websites, web portals or social web channels, field reports (created by other teachers and trainers that already gained experience in integrating social media in lessons) and expert information. Expert information is categorized into training concepts, lesson plans, reports, scientific publications and concepts (see Figure 1). Users can upload contents according to these criteria to the recommender system.

5.2 Supporting the right Social Media Usage to Search and Select Information

Within the learning field "Organizational Business Processes" trainees have to prepare a specific exercise in a group consisting of several trainees. For carrying out this task, the trainees have to search and select the right information to be able to carry out the exercise. However, they are not experienced in searching and selecting the right information. For this reason, they first want to be informed about how to efficiently search the information required to carry out the task.

Students log in to the recommender system. On the welcome page, users can select between several tabs. One tab contains as entry point the social media skill model consisting of the four skills *understand and rate information, select and manage information, communicate and comment information* as well as *create and edit information* (see also Figure 1). Here, users select the facet *Search and Select Information* as entry point. Media types that are classified to this facet are search engines, social networks and Q&A forums (Oloff et al. 2013). Based on the Competence Filter, irrelevant media types that are classified to the other facets of the skill model are separated out within the process of information retrieval.

Exemplary recommendations within this selected facet could be links to web portals, websites, social web channels as well as training material like learning documents, exercises, learning games and courses. The training material is not retrievable in the web but in the recommender system to ensure a psychologically and didactically evaluation of the provided training material. In addition to recommendations about appropriate media types trainees can be also recommended other users that are already experienced in searching and selecting information. This information can be explicitly gained by the users' declaration in the system and it can be also gained by implicit usage behavior which can be analyzed through system logs. An example for implicit user behavior is a click on a recommended item which the recommender system interprets as positive feedback. This positive feedback can be used to enrich the user's personal profile. The concept of user interactions is also depicted in the domain ontology.

The use case has been carried out successfully when trainees received helpful recommendations to prepare their group work and teachers received helpful recommendation to prepare their lesson. From system perspective, the use cases have been accomplished successfully when we could gain as much implicit information as possible. This can e.g. be in form of interactions like reading / click on a search and recommendation result, sharing learning areas with other users, commenting on contents, getting in contact with other users and uploading contact. All these implicit information can be used to enhance the knowledge base and continuously adapt to the user and his/her preferences.

The following figure shows an exemplarily result list of a search query. It depicts two different ways of how search and recommendation results can be displayed. The recommender systems contains two different views to display search and recommendation results. Figure 2 shows the "tweak-results" view.
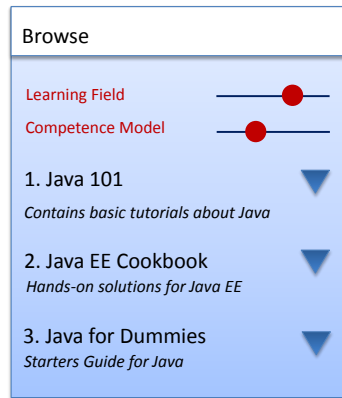
Figure 2: Tweak results view

In this view users are able to optimize the recommended search results by scroll bars. The weighting is determined by pre-defined rankers, which bring search results in a specific order. Rankers in this example are the Learning Field Ranker and the Competence Model Filter. Within each tab of the recommender system, different rankers are used (e.g. Competence Ranker, Time Ranker etc.). The following figure shows the "browse-view" of search and recommendation results.
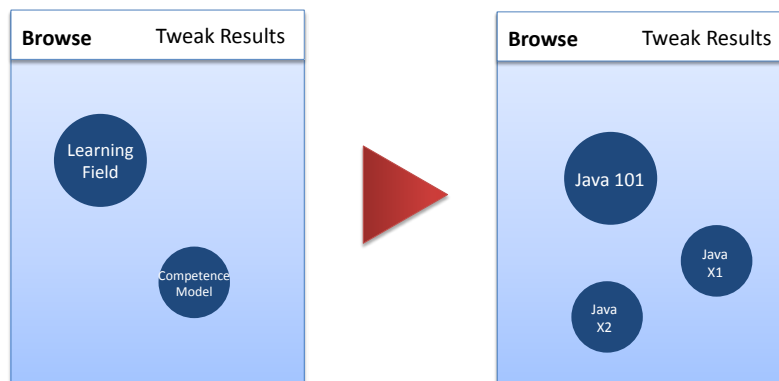
Figure 3: Browse results view

This view refers to the same content as the tweak result view. But here, users see on the first sight the relevance of the depicted search results. The size of the bubbles represents the relevance of the search and recommendation result according to the individual user profile.

6. Conclusions and Outlook

This paper presented two potential use cases about how the social media skills of involved stakeholders in vocational education and training can be fostered. The use cases have been derived according to Hevner's (2004) design science guideline "Design as a Search Process". The required information for developing the use case scenarios have been derived on the basis of qualitative research. Teachers, trainers and trainees have been interviewed about the current situation and weaknesses in vocational education and training, like e.g. the poor integration of social and digital media in vocational schools and training companies. Based on the interviews as well as a carried out study on already existing recommender systems in the organizational and educational context, shortcomings have been derived as requirements for the development of a recommender system for vocational education. The use cases presented in this paper form the basis for the implementation of the recommender system. Based on the use cases, requirements such as required filters and rankers could be determined which are going to be developed in a next step. Filters carry out a pre-selection of search and recommendation results that are not considered within search requests, whereas ranker bring selected search and recommendation results in a specific order that matches to the individual user.

Filters that are going to be implemented in a next step are the Competence Filter, Trainer Filter and Document Filter. The competence model filter refers to a selected facet of the competence model (see ontology). Media types that do not match to the selected facet are going to be rejected within a search request. If a user e.g. selects as entry point "create information", matching media types such as social networks, forums or media

sharing sites that are classified to this facet are shown to the user. Search results are going to be ranked according to the learning fields (Learning Field Ranker), social media skills (Competence Ranker), content object category (Document Ranker), rated content (Rating Ranker) as well as time (Time Ranker).

Once implemented, the recommender system is going to be analysed according to information retrieval metrics such as fall-out, precision and recall. Furthermore, it is planned to carry out lab tests with users to gain feedback about the proposed user interface as well as to derive feedback for the prioritization of features and the design of the recommender system. In a final phase the application will be tested in a real-life environment of vocational education with a sufficient sample size of users to ensure a qualitative evaluation of the research hypotheses.

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Filling the Gaps With a Virtual Learning Commons at an Online University

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Abstract: This paper presents a system set firmly in a distance education context but that has applications in a broader context of distributed workplace learning and enterprise knowledge management. Distance education offers advantages over face-to-face education, giving learners freedom of time, place, pace and approach to learning. However, a quality university education (and, by extension, learning in the workplace) is about more than what is taught in courses, and many courses teach more than their measured competences. A physical university or workplace affords manifold non-formal learning opportunities in informal and semi-formal loosely structured reconfigurable spaces like bars, cafes, libraries, corridors, offices and common rooms. As we move online, such spaces tend to vanish, replaced on the one hand by rigid task-oriented systems and on the other by a confused barrage of relatively structure-less email, forum and messaging applications, with little in between. To help address these and other gaps, at Athabasca University we created Athabasca Landing, an Elgg-based social learning commons. The Landing is a walled garden with windows, a safe social space for university staff and students who may, however, choose to make any contribution public. It is designed to fill the gaps between the formal course and an unstructured, fleeting stream of emails, forums, telephone conversations and webmeetings. It is a social construction kit, a soft system for creating, sharing, working and connecting with others. With no innate participant roles and fine-tuned but discretionary access control, it is a self-organizing flexible space built by and for staff and students alike. In this paper we describe the theoretical foundations, the development processes, the challenges overcome over its four years of operation, as well as those still faced in building a fourth place, an organizational Velcro that fills the gaps left in rigid, focused, course-oriented academic systems. We conclude that the Landing is a useful step in the right direction but that a more embedded and ubiquitous model will eventually be needed that involves moving from a monolithic site orientation towards a richer, embedded, service-oriented approach. We observe the wider applicability of the lessons we have learned in other commercial and organizational contexts.

Keywords: social media, distance education, learning commons, personal learning environment

1. Introduction

In the ways that we normally measure academic success, good distance universities are at least as successful as their physical face-to-face counterparts, as well as offering additional benefits, such as freedom of time, place, pace and medium of learning (Paulsen, 2008). However, a student at a traditional university does not only learn through intentional learning and teaching. Physical universities are replete with informal and non-formal learning opportunities in many different spaces. Students discuss course-related topics in cafes, smoking areas, sports facilities and bars. They talk with people outside their chosen fields, opening up great potential for novel or different perspectives on shared issues as well as affording the introduction of new ideas and topics. Simply being around other learners can motivate learning. There is an obvious *culture* of learning: learning is the norm, not just something done in private or alone. Both ideas and attitudes spread with ease. Equally, universities are places where friendships and networks are formed that have continuing social, career and learning value throughout a person's lifetime.

In contrast most distance universities are highly course-centric and focused on specific learning outcomes. While most provide rich online learning and communication tools, these mainly exist within closed course environments, with limited capability to interact beyond the course. At best, a further 'course' or bulletin board may be provided for groupings like faculties, schools and programs. Our own Athabasca University's (AU's) self-paced and continuous enrolment approach to delivery for undergraduate courses, while offering enormous flexibility and freedom, exacerbates this problem of isolation, inasmuch as it is very rare that two students will be working on the same thing at once, so even the course area itself may feel like a lonely space. Communication tends to focus on solving particular problems or, worse, is a requirement for course completion and so is stilted and artificial. Each student has direct access to a personal tutor for each course but, again, communication is largely course-centric..

Staff in a physical institution, like those in other physical organizations, share the same opportunities as students to see others learning around them, to engage in discussions in hallways and public spaces, and to be immersed in a culture of learning. Further structures like staffrooms, shared offices and workspaces support

ongoing learning and the exchange of ideas. At AU, as in many modern distributed organizations, these opportunities are limited as staff are almost as widely distributed as students, so there is little of the casual to and fro exchange of knowledge and information that physical proximity affords. Electronic communication tends to be instrumental and targeted.

Like most distributed organizations, AU has an advanced and well-developed communications infrastructure. However, though minimally integrated through single sign-on, each system is a task-focused island. The learning management system supports courses, financial systems support finance, student records systems support registration and accreditation, and so on. Each is a well-honed tool that performs its task effectively but, as with all hard systems, there are functional and social gaps. Typically, the gaps are filled with email. Email is an extremely soft, versatile and flexible technology but has some notable weaknesses:

- There is no guarantee of persistence: people may or may not keep archives locally that may or may not provide useful ways to search and organize them.

- Email is highly inefficient for sharing, requiring a lot of network traffic and storage, posts often get lost or trapped by spam filters, and people struggle with an endless flood of weakly differentiate messages.

- Email offers few opportunities for rich media, beyond attachments and simple formatting that may not even work at the other end.

Webmeetings and teleconferences sometimes help, but the fundamental issue is that many organizational activities do not fit into brittle structural hierarchies yet still need a level of structure of some kind: places to share documents; plan meetings; engage in asynchronous dialogue; share discoveries; provide a focal point for shared endeavours and interests. In a face-to-face university these are all around us. At AU, structural hierarchies and systems are deliberately built for purposes, intentionally limiting scope for error, but equally limiting scope for creativity and engagement.

For these and other reasons, we created Athabasca Landing, a social site designed to fill in many of the gaps in our focused process-driven systems, and to provide an organizational Velcro that would make people and their learning activities more visible to one another.

2. Athabasca Landing

Like the Klondike gold rush town for which it was named, Athabasca Landing is a rough and ready social space where people can set up homesteads or coffee shops, get together, exchange ideas, and share common spaces and artefacts. It is a social learning commons, a semi-public social space for staff, students and invited visitors at AU where they can create, share, connect and communicate with one another and beyond.

The Landing is based on Elgg, a plugin-based framework for building social media systems. It uses over 100 plugins, many written by or for us. It has many familiar social tools, including blogs, microblogs, wikis, groups, shared bookmarks, event calendars, file sharing, podcasting, video sharing, pinboards, polls and photo albums. It supports social networking, including profiles, 'following' functionality, activity streaming and the means to cluster people within a network into circles. It has rich tools for discovery, including ubiquitous tagging, recommendation tools for people and content, and classified search capabilities. In brief, it is a toolkit of social objects, tightly linked and integrated into a single cohesive site.

2.1 Design process

The Landing was implemented by the authors in early 2010, using federal and provincial government funding. Around 50 interested staff and students from across the university were recruited, who contributed ideas, debate and requirements in the selection process for the technologies and functionality of the site. They later formed the caucus of a loose steering network, *The Friends of the Landing*, which continues to support and guide the site and that currently has over 100 members. A project manager was hired to oversee the early stages of implementation, and we formed a small operational management and programming team. The site was publicized through staff workshops, student handouts with course-joining packs, mailing lists, social media groups and links from other AU sites, though it is symptomatic of the parcellated communication that occurs within the university that it remains a challenge to get out the message that the site even exists.

2.2 Ownership, control and diversity

The most fundamental principles that have guided us from the start were to facilitate ownership and, relatedly, control and diversity. This was to be a site where anybody could create anything, with as much flexibility as possible, and it would remain theirs, not the property of a course, a role or a committee. With ownership comes responsibility and so, to allow that to be exercised, we gave as much control as possible over what is posted, how it is posted, and to whom it is posted. Discretionary access control over every post means that people can reveal as much or as little as they like to whomever they like. Rental is not the same as ownership: thus, unlike most AU systems, students are able to log in and engage fully on the site when their course contracts end. If there are hierarchies then it implies some people have more control than others, so we decided that everyone on the site would be equal, from the president to a visiting student. Giving control meant that we would not proscribe any kind of post or behaviour apart from things that breached Canadian law or that caused palpable harm to others. As a consequence we also sought diversity, to afford scope for serendipity and discovery and to provide many good reasons to visit the site, so sustaining activity and interest.

2.3 An evolvable process

The Landing is more of a process than a product, built to be adaptable and to evolve. People and their needs change constantly, and the site itself helps brings about some of those changes, with each change opening up new adjacent possibles (Kauffman, 2000). The site is intended as a malleable space where anything can happen, that grows organically, not by fiat. In brief, the Landing is the website equivalent of the Seinfeld show, a site about nothing in particular, that hinges on the interactions between people, their activities and their ever-changing goals. It has no functional goal or purpose beyond that of helping people learn from and with one another, without intentional barriers or restrictions.

2.4 Sets, nets, groups and collectives

We have been guided in the design of the site by our model of social forms (Dron and Anderson, in press), which characterizes the kinds of interactions in educational social media as those of:

- Groups: intentionally formed entities that people deliberately join, typically with roles, norms, rules, hierarchies and purposes.

- Nets: the people you know, an emergent form that is different for every individual but in which clusters and patterns develop

- Sets: people that share the same interests or other attributes.

These forms are more like mixable primary colours than exclusive categories. Tribes and large organizations have a mix of group and set characteristics, for example, while communities of practice and some study groups are network-like groups. We had previously established that the use of inappropriate tools and methods that assume one form but actually make use of another can lead to a number of problems (Dron and Anderson, 2009), so we were keen to ensure good support for each form.

Most existing tools and systems at Athabasca University are based solely on groups, with hierarchical roles and distinct purposes, leading to structural brittleness. The Landing *has* groups, but its users, not its administrators, create these. We built tools to support, build and nurture personal networks, though social networking is only a relatively minor feature of the site. Sets, however, play a very large and important role. It is often more interesting to find people and content with shared attributes than it is to find particular people, given the educational context of the system (a feature shared by many large organizations with disparate weakly connected departments and centres).

We also wished to take as much advantage of collectives as possible. Collectives are manifestations of collective intelligence, in which many people's actions are aggregated and manipulated so that the collective plays a role of an individual agent: typical examples include rating systems, collaborative filters, tag clouds and network discovery tools.

2.5 Contexts

As we began to build the site we realized that people in an academic system, perhaps more than most organizations, shift constantly between multiple social contexts like courses, committees, informal study groups, friends, colleagues, societies, and so on. We have built many tools to support shifting contexts, and made good use of Elgg's native features. The fine-grained access control that Elgg provides, including the ability to cluster one's network of contacts into circles, makes it easy to show different things to different people. We have provided personal tabbed dashboards that play the role of a personal learning environment (PLE), letting people organize the Landing and feeds and widgets from external sites according to their needs. We have built context-switching tabs for personal profiles, dashboards and groups, allowing people to both show different things to different sets of people and to organize their environment according to social context (Dron et al., 2011).

3. Landing Members

In early 2014, the Landing has over 6,000 members who have produced over 30,000 posts, many more comments, 2,500 discussions (typically with many responses per discussion), generated around 350,000 messages, and formed over 400 groups. It receives over 20,000 unique visitors each month. It typically gains around 3 new members every day, sometimes more. 10-20 people are normally active within the past minute at any time of day. Based on a count of group membership for what appear to be course and staff working groups we estimate that up to 20% of members have been required at some point to join the site for work or study but, for the most part, people have joined voluntarily. This represents a small percentage of the overall university population of around 40,000 students, albeit including most staff.

The Landing has many groups relating to courses, sometimes informally created by students themselves to support their studies. Students often post for wider audiences than their course groups, so learning diffuses across the university and beyond in ways that were formerly hidden by closed course containers. Staff use groups extensively to provide support for ad hoc committees, subcommittees and working groups, as well as for more persistent communities like learning designers, researchers, or programs. It has also provided a useful focal point for organizations like student and staff unions, and alumni. There are many informal groups covering a range of interests from academic writing to zombie research.

Beyond groups, many individuals share blog posts, bookmarks and files with their networks or with the broader public. Active bloggers include many staff and students reflecting on their academic, personal and professional practice.

Typical of social media sites, the number of active groups and contributors remains a fairly small though constantly changing subset of site members. In any given month, active posters make up around 10-15% of the total of site users and, in a six-month period, only around a third of members actively post anything, with around half of all members inactive (measured as not posting) for more than a year. The same is true of groups, with around 12% actively posting in any given month and over half with no activity for more than a year. Given the changing population of the university, the fact that people come and go is no great surprise, but the reified activities of those who have left or stopped posting continues to provide ever increasing value. Like many similar sites, there can be sporadic storms of activity around topics that are topical or that someone has catalyzed with an interesting post. For at least some, it works. As one student put it:

"it's a close-knit, supportive place: comfortable, maybe even cozy. It has a thousand starting points and paths, many tools and endless possibilities;"

3.1 Demographics and interests

Partly because we migrated users from an earlier site that mainly supported members of the Centre for Distance education, and partly because it is an abiding interest of many staff and students, distance and online education is a disproportionately popular topic. However, there are plenty of other major academic tribes represented as well as diverse other topics that are not course-related. A good diversity of interests and uses suggests that the site is achieving its boundary-crossing roles effectively.

Figure 1 shows a tag cloud of popular tags. The preponderance of course codes shown here is in part because of tutors' common insistence that students should tag their posts with the course code, whereas other posts tend not to be tagged as consistently.

Figure 1: tag cloud for the Landing

travel, media, OER, research, education, 605, camping, writing, music, queer, swimming, intellectual property, complexity, mdde 601, e-learning, literature, mooc, facebook, 602, learning technology, edublogging, mdde690, academic blogging circle, graduation, mcast, hiking, podcasting, mdde 605, mdde603, comp602, distance education, landing, sewing, photography, project management, mdde 603, instructional design, podcasts, mdde602, mdde601, hockey, soccer, mdde663, convocation, social media, sports, comp 650, pedagogy, running, mdde610, mdde 602, copyright, social network, tlstn, mdde605, travelling, learning, Virtual learning environments, #change11, gardening, Social software etc, cooking, online learning, internet, mdde 610, reading, elearning, teaching, podcast, toronto, open access, history, conference, art, mobile learning, social computing, journals, soft technology, mcasts, family, journal, technology, skiing, Athabasca, mdde604, audio, e-portfolio, movies, video, Edmonton, blogging, university, computers, social software, assessment, 603, Calgary, 604, lms, open educational resources

4. Some Design Decisions

In the following subsections we briefly describe some of the design decisions made during the Landing's development, to offer insight into our thinking processes.

4.1 Building slow

The first author had been involved with an earlier Elgg installation, community@brighton (Stanier, 2010), on which all university staff and students had been automatically enrolled, a policy that did little to build a sense of ownership. This was exacerbated by its enthusiastic promotion by the first author and others as a means to provide alternative pedagogies in course-based teaching. Tools were therefore built to automatically enrol a class of students on a course into a group. For many students, Elgg thus became an extension of the learning management system. A prominent university announcement section on the site's home page reinforced this perception. We wished to build the Landing so that it would be loved by enough people to sustain it and engender a sense of pride and ownership, rather than to be just another tool to fit an institutional purpose. Any person with an AU login ID can join the Landing using their single-sign-on username and password but we do not want to *force* anyone to do so. Our mantra when building the Landing is 'critical passion, not critical mass'.

4.2 'mine' or 'yours'

The decision as to whether objects are portrayed as 'mine' or 'yours' matters because it relates to how the site is perceived, as an extension of the self or as a toolset. The archetypal 'mine' is illustrated by MySpace, being aligned with personal identity while 'You' is illustrated by YouTube, a more general-purpose tool. We decided on 'yours' ('your network', 'your posts', etc) because we wanted to emphasize personal agency and the explicit role of the toolset in providing it, and because of the diverse ever-changing contexts of people using the site. The Landing *serves* its users, but is not an *extension* of them.

4.3 Friends and followers

We changed the Elgg default of 'friend' to 'following', making it an asymmetrical bond (I may follow you but you do not need to follow me) because of the Landing's predominantly set- and group-orientation. At our earlier Elgg-based sites at AU and Brighton it had often felt uncomfortable asking students on courses to make

tutors into 'friends' and vice versa. We do however make it easy to distinguish actual relationships using circles (collections of those one follows), which helps to fine-tune the context for both sharing and tracking activities.

4.4 Widgetized toolsets

Widgets are small blocks that can contain, for example, videos, lists of blog posts, free text, and information from external sites, enabling the assembly of complex pages that pull content from many different sources into a coherent whole. Out of the box, Elgg provides a few widgets for use on profiles and personal dashboards. To offer greater control, we have significantly extended this capacity, adding many new widgets, a tabbed interface allowing multiple pages of widgets for profiles, PLEs and groups, alternative layout options, greatly extending the customization options for widgets and enabling groups to use widgets in much the same way as individuals. We also built a set-based tool, the Pinboard, which allows people to assemble pages based on widgets like other curation tools such as Pinterest. We aim to provide a construction kit that people can use in an indefinitely large number of ways to build a PLE and social space that suits their needs, without having to delve into the complexities of web page design and technology. There is however a fine line between softening a system for maximal flexibility and hardening it for ease of use and efficiency. Many of our widgets are not well used because the more flexible we make them, the more difficult it is to choose and configure them. In many cases, pages and groups are created using default settings, either because people find it too difficult or simply that they do not know what they can do.

4.5 Default permissions

The default setting has great influence over user behaviour (Kesan and Shah, 2006). Given the level of privacy control afforded by the Landing it was important to set a default value that served users' needs without constraining nor exposing them beyond their wishes. We initially set the global default to "public" hoping to encourage wider sharing. However we soon received complaints about the amount of user content returned by a Google Search, so we changed the default to logged-in members of the AU community. In groups, this too provided to be too open for some, and thus we changed the default within a group to activity of that group. Finally, we allowed individuals to pre-set the default level for their own contributions, to spare them setting this routinely.

4.6 Menus and social forms

We initially offered the default Elgg menu structure, with menu items for each of the main tools. This tool-centric focus was confusing, mixing different social forms indiscriminately and highlighting the tool rather than its purpose. To help address this, we designed a menu based on our model of social forms. An 'Explore' menu provides a set-based set of perspectives; a 'You' menu allows people to access their PLEs, and settings; a 'Your network' menu focuses on connections with others; a 'Groups' menu deals exclusively with groups; and a 'Create & Share' menu encourages people to post to any of these forms. We have also added indicators alongside each post to show in what social context they were originally posted, as well as tags and related content to help situate posts within a topic or area of interest.

5. Outstanding Issues

In the following subsections we discuss some of the more fundamental issues that remain with the Landing.

5.1 Soft systems

Our menus and contextual cues have helped with navigation, but the confusion persists due to the deliberate softness of the environment. Norms, expectations and processes differ considerably across the site. Different groups operate in different ways, different people in different circles are doing different things differently. Moreover, the flexibility of the toolkit means that it takes effort and skill to make effective use of it. Without rigid structure, it is up to individuals to make their own and, somehow, to communicate that to others. This is inevitably more difficult than it would be in a more structured environment.

5.2 Conflicting worlds and challenging beliefs

The Landing is not a single community with common norms, rules, purposes and expectations but more a *set* of people who happen to belong to AU. There are numerous overlapping networks, sets and groups with quite

different norms, interests, vocabularies and patterns of working. This diversity is exactly what we want. However, it can be uncomfortable, distracting and sometimes even upsetting, because discretionary access control means people often share things with everyone that may only be understood or appreciated by a few.

5.3 Systemic integration

Though integrated into teaching and organization processes across the university for several years, the Landing remains a research facility on a shoestring budget. Partly this is due to lukewarm executive support, despite several being active users of the site. A deeper problem is that the site does not quite fit with the way things are done around here. From the start we attempted to follow the processes used by our Computer Services department but the evolutionary nature of the site made this difficult, slow and frustrating. Our own need for constant tweaking and adaptation to the needs of the community is at odds with the traditional waterfall lifecycles of most task-oriented process-driven university projects. The Landing is more like a garden than a building, which does not sit well in a system that is geared towards purposive and intentional planning and tight proactive quality assurance.

5.4 Small pieces, loosely joined

When establishing requirements in the early design phases we built a list of what people claimed to want, such as blogs and wikis. This shopping-list approach resulted in a toolset that matched the items on the list more than social or functional needs. Elgg's plugin-oriented model has pushed us further along a tools-oriented path. Plugin-based assembly of small hard pieces brings many benefits but it is easy to lose sight of the big picture when designing this way, and we underestimated the effects of path dependencies. We cannot easily remove or replace something that is being used by even a handful of people, so formerly malleable small pieces become hardened into the system. Furthermore, each plugin is to some extent a law unto itself, using its own vocabulary and slight interface variations. One of the benefits of rigid hierarchies is that they make integration of smaller pieces more consistent and interoperable. The Landing has usability challenges in part because such integration is relatively loose. The piecemeal architecture makes it hard to improve this while supporting existing posts, and the habits and methods people have learned. Little reduces a sense of ownership more than unasked-for change.

5.5 The monolith

We built a monolithic website, a one-stop environment in which we embedded all of our tools and expected people to come to and engage with in addition to everything else they were doing. However, the real need is for embedded social engagement, with similar freedoms and levels of control as are provided by the Landing, *anywhere* within the AU ecosystem: on its public pages, in its courses, on its internal system tools, anywhere that people visit and congregate, This demands a more open architecture. Although Elgg has good support for open APIs that allow it to be used as a service, it would have been better to think from the start in terms of services that could be embedded and reused in multiple environments. We have recently been implementing a means to make it easier to embed the content of Landing pages within other AU pages but, in retrospect, a more distributed service would have been a better place to start.

6. Conclusion

Oldenburg (Oldenburg, 1999) famously described the third place as being that space that is not home and not work, but where people congregate, get creatively fuelled and exchange and nurture ideas. The Landing deliberately blends all three places. While we have built the system to sit within a very specific distance university context, such spaces are vital in any distributed organization, especially those that operate online with a distributed workforce. They provide an arena for the spread of tacit knowledge and for the reification and co-development of an organizational culture that more or less rigid tools cannot cater for.

The Landing is, as its name unintentionally suggests, a stopping place along the way to something altogether more interesting. We have built a learning commons and highly configurable social spaces but we have largely ignored what goes on in the existing 'buildings' of the university, taking that as a given. In a conventional university those more task-focused spaces also afford opportunities to learn from and with one another that have nothing to do with intentional teaching: corridors, hallways, common-rooms, library desks and cafes, to name but a few. This is equally true of similar spaces within organizations like meeting rooms, offices and

workshops, Our next steps must be to enter these spaces, to infuse them with life and learning, to connect them and allow people to paper them with the equivalent of casual chat, posters on pinboards and signs of learning life that are part of a traditional university experience. This will be challenging because we will need to work with and encroach on the spaces that have traditionally been owned and managed by people with defined roles who will not wish to give up any of their control over them. However, if we are to move forward and gain the full benefits of shared learning, this is the logical next step.

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Pro-Am Writing: Towards a Framework For New Media Influence on Old Journalism.

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Abstract: Recent years have seen professionalisation of journalism through education, with more courses at universities and more practitioners with a journalism degree. At the same time, more there has been a rise of the amateur information source in the form of web 2.0 blogs, wikis, chat rooms, and social media sites. Professional training and amateur information meet as journalists turn to crowd-sourced new media for story ideas and framing, by checking social media to see what is the current opinion on a topic. Thus professional standards coincide with amateur attitudes even as journalism struggles to establish an identity in a time of upheaval in the industry. To study the interplay between amateur and professional, this paper looks at European and Asian journalism students' engagement with social media while taking part in a travel-writing practicum course. As Cochrane, Sissons and Mulrennan (2012) say, "journalism education needs to respond to the implications of the wave of social media" while Zelizer (2004) points out that facts, truth, and the reality of journalism are called into question by modern ideas of subjectivity. Travel journalism is of interest as it is a form of writing in which a subjective, social media-like personal experience is already favoured over more classical journalistic norms of objectivity. Using in-depth interviews with 18 students, this research explores the influence of amateur social media on professional journalism, and the study examines issues surrounding the use of peer-sourced background information and amateur sources in creating professional journalism

1. Introduction

The rise of the amateur voice fuelled by the Internet has challenged professional opinion formers and experts. This study considers how amateurs in the fields of travel and journalism may be influencing professionals operating where those two fields intersect: travel writing. To take journalism first, studies of the interaction of social media and journalism have looked primarily at how professional media outlets use the contributions of amateurs (Domingo et al 2008; Hermida and Thurmann 2008). However, there have been concerns from newsrooms that user-generated content (UGC) is a mixed blessing: it builds traffic to their websites and offers hyper-local information, but it can undermine traditional newsroom values and norms (Domingo, 2008; Paulussen and Ugille, 2008; Singer 2010). Rebillard and Touboul (2010) found that contributions from the public were a 'play-ground' of news rather than being treated with the seriousness of seasoned professionals. But while many studies have looked at the interactivity (or otherwise) of professional journalists and amateur sources, the *influence* of social media on the attitudes of journalists has been less well explored. This paper looks at the effect of UGC and social media on travel journalism, based on the presupposition that travel journalists are as likely to use the Internet to research a destination as any traveller; and as likely to turn to the Internet for information as any other kind of journalist. As audiences are likely to base their opinions of foreign countries and cultures in part on what travel writers report, the influence of social media may have repercussions beyond travel journalism itself.

In a time of change wrought by the Internet, it is likely that journalism itself is changing; it has done so in the past. Herbert (2004) note the move from florid literary style to the terser modern news style brought about by the arrival of the telegraph. Lewis (2003: 95), meanwhile, states that "news sources are changing, and so are news audiences. Moreover, what counts as news may be changing"; this paper further suggests that the attitudes of the people who make the news – journalists – may also be influenced to change by the impact of amateur UGC sources.

The effect of UGC on travel planning has also attracted attention (Buhalis & Law 2008; Milano, Biaggio & Piatelli 2011; Pan & Fesenmaier 2006; Xiang & Gretzel 2010). Studies have found that the Internet is the preferred source for travel information searches, particularly UGC and blogs (Gretzel, Yoo & Purifoy 2007). Casaló, Flavián and Guinalíu (2011) note that the first source of information for travellers is online, and people often consult UGC social media sites such as TripAdvisor. Once again, however, it is not clear how great an effect it has on travel behaviour and while one study found that backpackers rely on the immediacy of UGC (Hofstaetter & Egger 2009) others found no evidence of social media influencing travel plans directly (Volo

2010). Yet, as more tourists research their travel online, the texts and pictures they find there are playing a greater part in creating an image of a destination, hotel or attraction in their minds (Camprubi, Guia and Comas 2014).

This paper is the first part of a three-step exploration of how social media flows into and through journalism, and the web-influenced writing that emerges at the end. It looks primarily at the use of social media and UGC as they feed into travel journalism, and considers what effect they might have in terms of topic selection and framing. To do this, it studies the research activities of European and Asian students as they prepare for and take a journalism trip to Istanbul where, topically enough, East meets West.

This paper is arranged as follows: some perspectives on the use of social media by journalists and travellers are discussed, and this leads to three research questions which in turn lead to interviews to gather data on what websites and social media might influence travel writers. The methodology section explains how the respondents were selected and the data-gathering process, followed by findings and discussion. The paper ends with an acknowledgement of the limitations of this study, and suggestions for further research.

2. Background

The confluence of influences among travel, journalism and media has been explored from different angles, with the exception of the one taken by this paper. One study by Day Good (2013) observed how professional journalism influences amateur UGC. She analysed travellers' photographs submitted to the *New York Times* and observed that many of them conformed to journalism-style photography, "exhibiting journalistic cues and conventions" (Day Good, 2013: 302). Another form of influence has been observed by Milano, Baggio and Piatelli (2011: 475), who note that "many tourism businesses are, in one way or another, changing their approach to the manners of presenting themselves online," based on their observation of the success of features of social media sites. Curran (2002: 163) points out that the media give frameworks that influence the public's perception of life through "routine representations of reality" while at the same time, being influenced itself by public opinion and demands. Hsu and Song (2013) offer a round-up of thought on the influence of the media on travel behaviour, citing the credibility of magazines and newspapers as being key to the esteem in which they are held by readers, and thus their impact on destination choice:

> "The media, as one of the most important information sources for tourists (Bieger and Laesser, 2004), can affect people's cognitive and affective responses and influence their behavioral intentions (Miller et al., 2000). In the tourism context, media-projected images can arouse the desire to travel to a specific destination (Pan, 2011)."

What has changed with interactive social media, however, is that this has turned around; this un-explored area is the theme of this paper. To invert Hsu and Song's comment, it may be said that tourists are now one of the most important information sources for the media, and the words of the amateur reviewer writing a blog can affect professional journalists' cognitive and affective responses, and even influence their behavioural intentions. In the media context, tourist-projected images may arouse the desire in the journalist to travel to a specific destination, either to see if the level of tourist interest is warranted, or to write about a destination that evidently resonates with an audience.

'Social media' is widely taken to encompass a trend in online media that allows individuals to post and share information and opinions, pictures and videos, through blogs, virtual communities, shared endeavours such as wikis, and media sharing sites such as Flickr, Instagram and YouTube. This has become such a phenomenon in the travel industry that it has spawned the term Travel 2.0 (Xiang & Gretzel 2010).

UGC as an information source is based on a few factors. First, search engines direct information-seekers to some sources and not to others; more popular sources go to the top, creating a self-fulfilling spiral of information whereby what is found to be helpful (or which is promoted by an organisation) is likelier to be presented to tourists than more obscure, specialized sites (Xiang & Gretzel 2010). Buhalis and Law (2008) suggest that the simple act of searching has significantly changed tourists' behaviour as they plan trips for themselves. This alone will change levels of emotional investment in a destination, as well as expectations about it. Second, branded UGC sites such as Wikipedia can be easy go-to sites for an overview of a destination. Third, even commercial sites such as Lonely Planet offer forums and chat rooms for travellers to share information, while semi-commercial UGC sites such as TripAdvisor allow travellers to post their reviews of hotels, tours, guides, attractions and destinations. These have broad appeal; fourth, and on a more personal level, blogs and microblogs, and social networking sites such as Facebook all provide platforms for comments

on a place to be shared and now has the potential to reach hundreds, possibly thousands and, more rarely, millions. Word of mouth has been replaced by 'word-of-mouse' (Gelb & Sundaram 2002). "Thus, tourists now take a much more active and prominent role as image-formation agents than before the emergence of Web 2.0 tools, by publishing comments, advice and experiences on blogs, forums, social networks, etc., and also through videos and pictures uploaded to Web 2.0 sites" (Camprubi, Guia & Comas 2014: 205).

The follow-on effect is that when travellers return home, their travels have been informed by online information and they may wish to share their own experiences, either to help the next wave of travellers, to punish or reward an attraction, restaurant or hotel, or to boost their own social status by appearing expert (Lampel & Bhalla 2007; Yoo & Gretzel 2008). More indirectly, the amateur personal experience has replaced the professional expert opinion as the common currency of the travel text (Duffy 2014). Blogs are written primarily from a first-person viewpoint, reporting an individual's travels, often couched in emotional terms (Volo 2012). Much of the travel information for which readers once turned to journalists, they now turn to each other online. Consideration of these points led to three research questions concerning the effect of UGC on travel journalists:

RQ1: What sites are visited by travel journalists when gathering information?

RQ2: What motivates these writers to visit these sites?

RQ3: How do UGC and social media inform travel writers' planned behaviour overseas?

3. Methodology

As an exploratory study of the influence of social media on travel journalism, this paper used travel writing students from the UK, Finland, Singapore, China and Taiwan, as a test case. The intention is that it will yield a tool that can be later applied to professional travel writers worldwide. The author is involved in leading a travel-writing practicum class for Asian students to Istanbul, meeting a group of European students there. The two groups will collaborate on a multimedia travel-writing website. One criticism of travel-writing studies is that it has a strongly Western focus (which links to the dominant Western ideologies in travel and travel studies) and it was considered helpful to de-Westernise this study by including students from different sides of the globe (Winter 2009). For the first stage of research, 18 of these students were interviewed face to face in early 2014 in two universities in Singapore and the UK as they worked online researching their travel and their proposed travel writing in Istanbul, before a visit one month after the interviews.

Each interview took around one hour and all were semi-structured to allow for the similarity to compare one with another, and the flexibility to allow new areas of interest to develop (Roulston 2006). The interview followed a rubric of observed production of the online texts (such as who wrote it and what was their motivation, the implied locus of power in the text and the dominant values it suggested) and its reception (how the respondent interpreted the site's representation of the destination, how they see their own travelling philosophy as reflected by the texts, and their intentions to use the information found in the texts).

Each respondent was asked to log on to the Internet and search for information first for the trip to Istanbul, and second for more specific information related to a travel article they planned to pursue while there. Interviews have been credited with giving an insight into how an individual feels about a topic at the same time as being criticised for producing socially desirable answers (Hannabuss 1996). In this instance, the socially desirable answer was considered a valuable response, as travel – and travel journalism – has a strong social component. Thus if a respondent claimed to be a traveller rather than a tourist (Week 2012), that could have been seen either as a statement of genuine travelling experience or as a socially desirable claim made by one who wished to be considered thoughtful, sensitive, adventurous, experienced or otherwise superior to a tourist.

4. Results and discussion

A common (but not consistent) search pattern was the use of Google first to gain an overview of Istanbul using UGC sources such as Wikipedia and Wikitravel, followed by mainstream journalism and guidebook sources, and finally looking at blogs to garner more personal advice and ideas. This was particularly evident for respondents with less travelling experience and less prior knowledge of the city, who were motivated first to gain background information and then to focus on specific areas. Those with more experience of the city were likelier to go to blogs sooner. Google was the search engine used by all respondents. No respondent made any

reference to its limitations, and the probability that it would return a certain type of site. It was rare for any respondent to look beyond the first screen of results, and only two looked at a second screen while just one ventured as far as the tenth screen in search of something unusual.

The search terms used fitted into three categories, each equally common. First was a basic background search, using terms such as 'About Istanbul', 'Turkish culture', 'Food Turkey', 'Travel in Istanbul' and 'Istanbul weather'. Respondents said their motivation was to gain perspective and to see the bigger picture of the city, and also to spark ideas on topics to write about. They also used search terms with strong tourist elements, including 'Things to do in Istanbul', 'Top 10 attractions in Istanbul' 'Istanbul city guide' and searches for specific, mainstream attractions such as 'Blue Mosque' 'Hagia Sofia' "Grand Bazaar', 'Taksim Square' and 'Topkapi Palace'. Here, the reasons given for such search terms were either that the respondent did not know about these places and was intrigued by the frequency with which they had appeared in background research websites, or that they knew that these were the main tourist attractions and wanted to know more either to visit them or to have a clear view of what the big attractions were so that they could avoid them. There was an occasional concern that a lack of knowledge might lead them to mistake a mainstream attraction for an alternative one.

As the journalism students were also pursuing specific travel article ideas, they used Google for information on these, their second common search approach. These were once again a mix of traditional tourist attractions, with terms including 'Traditional Turkish hamam', 'Princes Islands', 'Turkish bath' and 'Hippodrome events'; and less well-known aspects of the city such as 'Fishing in Istanbul', 'Indie music in Istanbul', 'Turkish coffee fortune telling' and 'Cats of Istanbul'. Two respondents had recently been to the city and had very precise ideas for travel articles, and hence searched for 'Istanbul moustache transplant' which yielded a rich trove of information, and 'African migrant football cup Istanbul' which offered only news articles but no directions to the next match.

The third common search approach was to look consciously off the beaten track, using search terms that included 'Istanbul less travelled', 'Istanbul adventure', 'Istanbul non-touristy', 'Turkey what to do different' and 'Lost in Istanbul'. The motivation here was, ironically, to find places to see and things to do that were off the tourist radar. This indicated a consistently expressed identity of alternative, independent traveller which was observed in two-thirds of the respondents who expressed a preference for the local over the touristic, and the obscure over the well-known. However, no respondent mentioned the potential problems of searching for off-the-beaten-track activities using the world's most popular search engine which has been designed to return the most popular websites on any given topic.

While aiming for this independent identity, their searches were often mainstream, with Wikipedia and Wikitravel common sources. These were usually visited with a sense of caution, based on education that had barred them from citing them as sources; but a pragmatic idea that they were probably accurate enough for this task. The next level of commonly visited sites included TripAdvisor and Lonely Planet. The former, again, was visited with trepidation that it was not entirely trustworthy but would give a clear general idea of what was popular and might also spark some ideas about places and activities; the latter was appreciated for being reliable and accurate, but respondents worried that it might report mainly popular tourist activities. For those who wanted to find something new, if an activity was written about in Lonely Planet, then it was already too well known. Here the motivation was to separate out the standard sights from unusual ones, to identify tourist as opposed to traveller behaviour. The third level were articles from regular news sources, including international wire agencies AP and AFP; UK-based newspapers *The Guardian*, *The Telegraph* and the *Daily Mail*; US-based news sources the *Huffington Post*, CNN and the *Wall Street Journal*; and one Turkish news site, *Hürriyet Daily News*. Respondents were motivated by a desire for confidence and facts, to form a platform for their own explorations.

None of these sources was to be used alone; they were either compared or used as a source to be checked against during the trip. This implies a certain influence, that the respondent would travel with expectations set by both traditional and social media, which they would either agree or disagree with when in Istanbul.

Other sites that were visited more than once, based on their presence on the first page of Google, were National Geographic and Google maps. A website sponsored by Witt Hotels was visited by five respondents as it offered background information and appeared high on the Google search. None of the respondents noted that it was a hotel website and, when prompted, said that once they were aware, found it less trustworthy.

As a third level of searching, half of the respondents actively sought out blogs, which was considered an unexpectedly low proportion from this generation of travellers. Blogs took two forms: the first written by people staying in the city, such as thisismyistanbul.wordpress.com, myphilosofia.com and istanbultrails.com. Respondents used these blogs because long-term residents were considered to have an insider's viewpoint and would be able to suggest less well known sights and activities. The other kind of blogs were by travellers on the move, and included soleiletcafe.wordpress.com, theplanetd.com and legalnomads.com. Respondents valued them for offering authentic reports on what happens in Istanbul, without the bias of a commercial site; and also for giving information on travel itself. This was an unexpected theme in the interviews, that respondents were as interested in learning about travel per se as they were in learning about Istanbul.

The third research question concerned the influence of social media in informing travel writers' planned travel behaviour. The influential forms of social media were Wikipedia, TripAdvisor, the Lonely Planet forum pages and some blogs. The amateur aspect of the content found there was considered a concern for Wikipedia and several respondents voiced a worry that it might not be reliable because it was not clear who had written it. On the other hand, blogs were considered reliable (although still as a suggestion rather than a travel plan) because the identity of the blogger was clear and thus the respondents could see whether the blogger was likeminded or had different travelling attitudes. The influence of other social media such as Facebook, Tumblr and Twitter, was less evident. If respondents mentioned them it was either after being prompted or with a grudging acceptance that perhaps they might see if a friend had been to Istanbul, or look at photographs for inspiration, or see what was trending on #Istanbul in case it might lead to a story. But in terms of direct influence on the attitudes and behaviours of these respondents, these were considered minor.

5. Limitations and further studies

Travel writing students are not professional journalists, and are not exposed to the requirements and commercial demands faced by those who make it their living; nevertheless, they have an intention rather than a vague desire to do so, as evidenced by their taking a course. In addition, by taking a journalism related degree, they have shown commitment to professional ideals of journalism (Splichal & Sparks 1994; Willnat, Weaver & Choi 2013). The next stage of this research would be to apply the findings to a study of professional travel journalists, adding to Hanusch's (2012) study of their professional views.

This study has highlighted the conflicted identities among travel writing students who want to appear to be independent but at the same time refer to mainstream websites. As a result they visit both the sites that give basic information such as Wikipedia and well-thumbed sites such as Lonely Planet, and can either dismiss them as 'just background' or value them as telling them either what to see or what to avoid. Only two of the respondents defined themselves as mainstream travellers, and both had little travelling experience; the majority saw themselves as adventurous anti-tourists, with a preoccupation with writing about the real lives of Istanbul residents, and showing the side of the city that does not appear in tourist writing.

A further study might look at the language of these two sources and how it leaches into travel writing as evidence of its influence. Subsequent studies will look at the use of and effect of social media throughout this three-stage process of journalism production, how the agendas of social media play out in the texts they generate and share online; and finally how those texts are received by an audience.

Most respondents encountered difficulties finding online information that might support the independent traveller identity, which leads to the greatest contradiction: a generation of travellers and travel writers that wants to be seen as independent but which researches journeys using a device that delivers information placed there by tourist boards, tourism guides, newspapers and mass-market UGC such as TripAdvisor and Wikipedia. Metaphorically, they are trying to go off the beaten track by following a well-worn map.

A further challenge is that the time it takes to allow for serendipitous happenstance that might lead to an off-the-beaten-track article is a luxury not given to travel writers working on limited time; these students have just one week in Istanbul. Thus the Internet offers to do a lot of the legwork and give ideas; but without precise knowledge and search terms, it is likely to direct them towards mainstream sights that dominate online travel information. Only time in a city will yield up its secrets; but as they have little time, they must search by proxy using the experiences of those who have gone before them so the secrets are now in the public domain of the Internet. How can they blaze the trail they wish, when they follow in others' footsteps?

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Combining Social Media and Collaborative E-Learning for Developing Personal Knowledge Management

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Abstract: The paper reflects action research on the learning implications of several social media and e-learning application combinations. It reveals dilemmas related to balancing chaos and order, trainer-driven and self-regulated knowledge sharing, open and closed learning communities, virtual and field projects in collaborative learning. A combination of social media and collaborative e-learning empowers students to be successful networkers and to develop personal knowledge management competencies in order to: (1) define their social and business networking priorities; (2) scan and critically filter information in social media; (3) use weak ties in social networks for increasing the diversity of knowledge sources and for widening their lens for innovative initiatives; (4) create cross-border student teams for using new self-actualisation opportunities, including co-creative entrepreneurship. The paper reflects the experience of the Estonian Business School in applying six such combinations and it discusses their implications for entrepreneurial networking and personal knowledge management development. Moodle discussion forums and commentaries on assignment contributions of other students can imitate some functions of social media, but these tools do not create an open learning space. Tricider combines creativity in open networks and the structured assessment of new ideas. Social media can be used for cross-border team formation and knowledge sharing, which is further channelled to field projects in support of the internationalisation of start-up entrepreneurs. A high degree of self-regulation in networking arrangements can, in some situations however, decrease the diversity of ideas and the innovative impact of social media as students are more used to applying social media for retaining links with their present friends than for creating new types of networks focused on innovative business opportunities in cyberspace. Our experience has demonstrated that critical thinking for finding high-quality content in social media assists students to link their social media involvement to their personal knowledge management priorities.

Keywords: social media, e-learning, knowledge sharing, networking, personal knowledge management, business opportunities

1. Introduction

One challenge of academic education is to adapt to the new opportunities of education and business opportunities in cyberspace. Co-operation between universities and entrepreneurs assumes leaving the academic ivory towers and overcoming time allocation and information hoarding obstacles in order to involve academics in communities of practice (Buckley and Du Toit 2010) and in networking supported by knowledge sharing on the Internet. Web 2.0 means internet-linked applications, where users are actively involved in content creation and networking. Voluntariness, participation, a strong need to enhance contact between members and internal motivation linked to the personal relevance of knowledge play an important role in knowledge exchange (Matschke at al. 2012). The development of these features of the learning process is one of the crucial challenges faced by higher education institutions when preparing their students for life-long and community-based learning. In a rapidly changing society, students need skills to enable them to monitor relevant information sources and find new reliable contacts for knowledge sharing. The widespread use of mobile devices and the opportunity of users to create and communicate content at different locations and to shape their own learning context have changed the discourse on digital literacy and eroded the distinction between the learner and his/her context (Cook 2010). The immediate experience of the here-and-now context is diluted and there are multiple mobile virtual spaces of conversational interaction instead of a solid stable spatial context. (Traxler 2011). Efficient networkers can disseminate simultaneously their immediate experience from different locations to physically distant network members if these persons understand their context. Shaping different contexts for knowledge sharing and joint actions and reflecting the experience of network participants in a meaningful way are therefore important issues for modern academic learning.

Ahmed and Qazi (2011) present research evidence that the academic impact of social networking sites on students' academic performance is positive. The academic use of Facebook and other social networks for academic learning is rapidly increasing (Junco 2012). There is, however, also research evidence that learners can resist the use of Facebook and other social media environments for formal learning purposes if they see it as an attempt to "colonize" their network for informal socialising with educational content (Greener and Grange 2012)

Knowledge acquisition and learning through networks are important for successful entrepreneurial initiatives (Chunyan 2005; Ruiz-Arroyo et al. 2012). Organisational learning and knowledge management are based on the diversity of knowledge sources (McEvily and Marcus 2006) and on networks both inside and outside the entrepreneurial organisation (Owen-Smith and Powell 2004). Academic education can prepare students for the collaborative use of social media in business-focused knowledge sharing and in entrepreneurial networking.

The main research question in this paper is: What are the experiential learning opportunities and challenges of combining social media and e-learning applications in the academic context of business studies?

The paper is structured as follows. Firstly, it provides an overview of literature. Subsequently, it describes six applications of social media and e-learning. In the following section it analyses challenges and implications of these tools are. The final section discusses the main conclusions and further action research opportunities.

2. Literature Review

The Internet and social media accompanied by the globalisation of business operations have directed the innovative entrepreneurship focus towards virtual teams and co-operation networks that cross space and time-zone barriers and towards innovation ecosystems that assume a wider development lens (Adner 2012) than one organisation. Our primary interest is to understand the implications of social media for educating co-creative entrepreneurs. Davidsson and Honig (2003) stressed the central role of network-enabled knowledge resources and the social capital for nascent entrepreneurs and the linkage between recent and previous knowledge in the process of business opportunity identification.

Wenger et al. (2002) explained the importance of communities of practice and stressed the role of peripheral participation in such communities in order to develop competencies required for networking. Social media is creating daily numerous participation opportunities that may be more or less relevant for education and self-development. Online networking offers opportunities for cognitive diversity that enables innovative learning, but it can also lead to communities where like-minded persons repeat and reinforce the narrow-minded views of each other. This danger is relevant for closed communities that do not have people in the role of "gatekeepers" looking for ideas from other communities. Widespread peripheral participation helps "gatekeepers" to transfer information between different communities.

Meaningful participation in virtual networks and nurturing professional connections are dependent on trust. Claybaugh and Haseman (2013) studied the strength of professional connections in LinkedIn and concluded that it is related to a disposition to trust an individual's general willingness to depend on others within a variety of social contexts. The network member's perception of trust in his/her last connection also had strong influence on the member's strength of association with the same individual. The stronger the trust between people with no previous history of face-to-face co-operation, the more likely they will be prepared to act on information provided by the connected person. An implication of this research is that the use of social media both by students and academic staff in the learning process serves to enhance the positive disposition to trust online communication and co-operation partners.

Encouraging students to use social media more for learning, professional development and business networking is, however, a challenge for educational institutions. Ezumah (2013) presents survey results of US college students demonstrating the dominant position of Facebook, the rising popularity of Twitter and the low popularity of LinkedIn. Among the respondents, 32% answered that they had never heard of LinkedIn. Practically all (98%) respondents stated that 'keeping in touch with friends' was the number one reason for using social media networking sites. Making professional and business contacts were mentioned only by 27% and learning, by 26% of the respondents. Social networking site usage focuses, in practice, largely on strengthening existing ties as opposed to creating new links (Garcia et al. 2011). Mostert (2007) suggests getting out of one's comfort zone as a way to creative ideas. In this context, interpersonal networking actions aimed at network-broadening (Vissa 2012) deserve attention.

Stanton and Stanton (2013) raise the question of business students being digital natives or digital neophytes in the context of using course-based Web 2.0 applications. According to their survey evidence, 38% of students had never heard of online collaboration tools such as Google Docs, 40% had never heard of LinkedIn and 65%, of social bookmarking tools. Students in this survey perceived in-class activities and discussions as the most

effective tools for enhancing their learning. When assessing the use of Web 2.0 applications for the enhancement of learning, video streams from YouTube, online collaboration tools, presentation sharing tools, wikis and social networking sites were viewed as effective by at least half the students. Their approach towards blogs, social bookmarking and social notes was more critical. A study by Churchill (2009) gave different evidence, namely that a blog-based environment fosters a learning community in which learners feel that their needs and opinions matter.

Social media facilitates social interaction and collaboration and enables deliberation across stakeholders (Bryer and Zavatarro 2011). Academic applications can match deliberate choices by students and involve new stakeholders in the collaboration process in order to diversify their networking experience. The challenges of combining social media and academic learning include the following: finding the right balance between guidance by the academic staff and deliberate personal choices of students when searching new online connections and knowledge sources and balancing the supervision and self-regulation of collaboration processes in student teams with business stakeholders.

Social media applications during academic studies prepare students for the efficient use of personal knowledge management tools after their studies. Davenport (2010) explains the core of personal knowledge management by describing capabilities essential for creating, sharing and applying knowledge. These capabilities include searching for knowledge and capturing knowledge in a way that is beneficial to others, for instance, tagging personal documents that can be then accessed by others. Prusak and Cranefield (2010) have stressed the importance of four foundational practices of the personal knowledge management: scanning and reinventing, vetting and filtering, investing in networks and getting out of the office. Social media is characterised by a rich variety of information sources. In addition to the content itself, links between items and explicit quality ratings from members of the social network create value for users. Finding high-quality user-generated content in social media is, however, a challenge for many demanding users (Agichtein et al. 2008). In a world of information overload and diversity of knowledge sources, learning to evaluate the quality of online information and deciding which knowledge sources to trust have become more complex. Vetting and filtering knowledge sources, especially on the Internet, are skills that are generally not taught in academia (Prusak and Granefield, 2010), although they are essential for critical thinking.

Critical thinking skills can be developed in participatory experiential learning, where students are exposed to current business practices, and teamwork is used for developing new products or service ideas (DeSimone and Buzza 2013). Duncan and Barczyk (2013) review results of Facebook-enhanced courses, where students were assigned a term project and student teams had the option to use Facebook for virtual meetings, for posting YouTube links, for commenting on each other's works and for other knowledge sharing activities related to their project. They pointed out that some students needed reassurance that their postings were private and would only be viewed by members of the class. A conclusion of the authors is that the Facebook-enhanced course contributed to students' sense of learning by encouraging them to ask more questions, but it enhanced their connectedness to a lesser extent. Experiential projects play a pivotal role in transformational learning and present a valuable alternative to long-term internship as such projects promote team work and collaboration (Kosnik et al. 2013). Co-operative learning on blended courses, involving both the online component and the face-to-face project work, is discussed by Johnson (2013). She points out the need to apply peer reviews and to allow members to "divorce" themselves from project teams in order to diminish the problem of free riders.

The experiential learning process is reflected by Kolb (1984) in his classical model, where learners move from reflective observation to abstract conceptualisation and further to active experimentation, thus acquiring concrete experience. Kolb's learning model has been further developed by Kolb and Kolb's (2005) interpretation of learning spaces that may be different for students depending on their learning style and speciality, such as business and arts. We use Kolb's experiential learning model as a tool for conceptualising and visualising the process view on different combinations of social media applications, e-learning applications and team projects.

3. Action Research on Six Educational Practices of Combining Social Media and E-Learning Applications

3.1 Methodology and Overview of Tools

Action research is a process where the promotion and management of change are linked to the promotion of learning and collaboration between all participants of the process, and where research results that are applicable in other contexts are also produced (Leitch, 2007). Both action learning and action research include learning, searching, problem solving, systematic inquiry and reflection of participants upon their action. Following are brief descriptions of educational changes introduced at the Estonian Business School entrepreneurship and international business learning in the context of e-learning and social media application starting from 2006.

Discussion forums in the Moodle e-learning environment have been used by us for knowledge sharing between students studying international business and those studying knowledge management subjects. When studying the international business subject at bachelor's level, students have been asked to comment on the two best home assignments by their peers on potential export destinations and to add internet-based information to the analysis performed by previous groups. In the knowledge management courses, working master's students have uploaded on Moodle brief overviews on webpages and networks that offer meaningful information for developing knowledge management in organisations. Master's students in the majority of study streams have been more active in giving positive online feedback about web-based knowledge sources identified by other students than have undergraduate students. Assignment results have been retained in Moodle forums for re-use by students of the following year, and only 3 of 292 students involved in such practice have requested the removal of their assignment from the e-learning environment on completion of the course.

The assignment for finding massive open online courses (MOOCs) and the team-based selection of the two most relevant MOOCs for developing entrepreneurial competencies were used in 2013 in order to find and fill in gaps in the Entrepreneurship MBA curriculum. Twenty students were asked to promote their MOOC choices to other students in order to agree on the MOOC which will be the object of reflective classroom discussions on lessons learnt from accomplished online learning activities. The majority of students preferred online learning on negotiations and stress management to strategy and quantitative analysis focused MOOCs.

Sharing user experience about preferred social media sites and new online networking opportunities in the course blog has been the assignment in the course *Business in virtual networks* since 2007. Two hundred and twenty students have participated in these courses. During the first year the most popular virtual networking sites were www.orkut.com for Estonian residents and www.xing.com for Erasmus exchange students arriving from Western Europe. The priorities of Estonian permanent and temporary residents have gradually converged in Facebook during the following years, but preference for LinkedIn has remained low in the majority of study streams. Student contributions to the blog have often demonstrated features of emotional self-expressions and have been less structured than the contributions made to Moodle forums, although the format set in the assignment instructions has been similar.

Tricider www.trcider.com for online brainstorming has been used in the change management course since 2012 by 50 students for presenting and assessing innovative ideas for Europe or for certain types of organisations. Tricider specifies clearly structured spaces for describing the idea, for highlighting its advantages and disadvantages and for voting in order to select the best ideas. That enabled a structured assessment of ideas. In 2013, two Italian Erasmus exchange students asked students from their *alma mater* and their friends to check their ideas in Tricider and to vote for these ideas. That game changing initiative was a new lesson learnt for the course leader. I had to accept the highest rating of ideas gained by these two students as there were no regulations that ruled out the involvement of outsiders. In upcoming courses we consider explicitly allowing and encouraging all course participants to encourage their friends to rally in favour of their ideas in online networks in Tricider.

X-Culture online project work was implemented in 2013 as a pilot project in order to assess the suitability of this online co-operation tool for the international business course or for a special free elective. X-Culture consortium connects approximately 2,500 students from 80 universities in 40 countries each semester (http://www.x-culture.org/ 2014). X-culture creates multicultural teams. Participants from different countries

are mixed in teams for the online project work. Team members cannot choose other team members. They have to build their team consensus on the international business opportunity example they develop together online over a period of two months. Pilot participation in X-Culture demonstrated challenges of aligning knowledge sharing styles and online tool user experiences, including social media applications, in teams where students have never met each other and have no direct contact with the client enterprise in their project work.

Cross-border online teams for assisting enterprises in their internationalisation efforts bring together Erasmus exchange students and local students. During the period from 2006 to 2012, international student teams of the Estonian Business School conducted field projects for 61 Estonian SMEs in order to support their internationalisation efforts. Each team consisted of 4-6 students. Among the business sectors represented in these team projects, the most active were innovative entrepreneurs involved in start-ups in ICT, design, and tourism. In 2013, cross-border teams were created that involved students from the Haaga-Helia School of Applied Sciences and the Estonian Business School. Client entrepreneurs have generally pointed out the positive impact of the international composition of the student team and the value created by teams that have managed to combine information on foreign markets and potential clients from different internet sources, including online networking tools. In general, these teams that have devoted more time to face-to-face meetings with enterprise representatives have attained better results compared to teams that have mainly used online communication or have not visited the enterprise at all due to travel costs. The projects have also demonstrated that students representing Nordic low context cultures are better prepared for the use of online tools than students representing Southern European more high context cultures. These online tools include social media for acquiring pre-knowledge about the business context of the client entrepreneur and for efficient team collaboration.

In order to collect evidence on the positive implications and challenges related to tools described, the following methods were used: written feedback from enterprises and student team reports, content analysis of the discourse enabled by online tool, anonymous feedback of students in the study information system and results of group discussions with participating students.

3.2 Challenges and Implications of Applying Tools in the Experiential Learning Cycle

Our comparison of these six combinations of e-learning, social media applications, field projects and knowledge sharing in face-to-face classroom or team discussions indicate some advantages and disadvantages of each tool in the context of such personal knowledge management and network building enablers as creating connections with new people, nurturing trust, scanning, vetting and filtering new information sources, deliberation across stakeholders, user-generated content, individual and team-level self-regulation of students. We suggest that entrepreneurship education can apply different modifications of the experiential learning cycle in order to allow students to choose between learning paths that correspond to their entrepreneurial orientation, their pre-knowledge for identifying new business opportunities and their readiness for change (Figure 1).

While all tools in this cycle enable some user-generated content and encourage knowledge sharing between learners, discussion forums in the Moodle e-learning environment limit knowledge sharing to these students that have registered for the course. We have, however, permitted some content created by previous students to be re-used by subsequent participants in order to enable the continuous refinement of knowledge.

The assignments for finding massive online courses that could enrich the existing curriculum and the sharing of user experience about preferred social networking sites position students in the role of active advisors who enrich the sources and content of the academic learning. These learning tools can be seen as reflective observations of existing knowledge creation and dissemination practices and opportunities to train information scanning, vetting and filtering skills essential for personal knowledge management. One challenge of such an open knowledge search approach is, however, the need to align the pre-knowledge and self-development priorities of the participating students. For some students, an overview of LinkedIn by a student who has recently created a LinkedIn account is new and useful information, but for others it can be perceived as repeating common knowledge.

Figure 1: Kolb's experiential learning cycle (modified by the author of this paper)
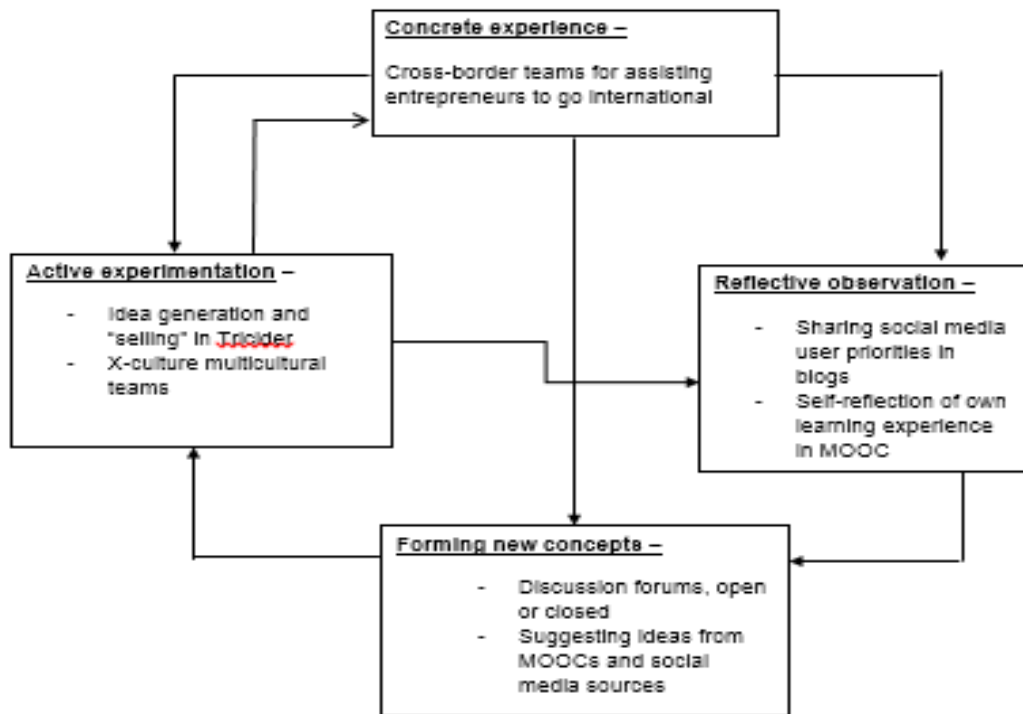
The Tricider online brainstorming tool prescribes a short and well-structured presentation and assessment of new ideas online. Such experience helps students to focus their social media use on proposing new ideas and to giving well-structured feedback about ideas proposed by others. Students can be also encouraged to involve their friends, potential beneficiaries of their ideas and other stakeholders of the proposed innovations to join the process of refining their ideas and rating the best idea. In such a network extension mode of Tricider use, the instructor has to accept the challenge of changing the balance between guidance by the academic staff and the deliberate personal choices made by students.

X-Culture provides students with freedom of choice concerning the content of the international business development project and social media or other online tools used for knowledge sharing inside the team. At the same time, they cannot choose their team members. They can only vote out free riders that do not contribute to the team. X-culture is a good experiment for revealing cross-cultural co-operation opportunities and challenges, but limited time for nurturing trust in online teams that do not have any face-to-face contacts, except optional Skype video call sessions, may leave some revealed online team conflicts unresolved.

Among the educational practices described, cross-border online teams for assisting enterprises in their internationalisation process represent the tool that enables concrete experience of field work with real entrepreneurs. Students visited start-up locations in order to understand the spatial context of their client entrepreneur and received feedback on the added value of their project. In the context of blended learning, one challenge of such projects is the scope and process of involvement of cross-border knowledge sharing students who are unable to visit the client enterprise versus the involvement of students who are able to visit the entrepreneur at least at the beginning and end of the project. Online participants from distant locations experience peripheral participation in learning communities in order to develop competencies needed for networking. They also increase the diversity of information sources from potential export destination countries. Building trust and co-creation in teams involving both peripheral learning community members and students able to communicate with the client entrepreneur in their physical space is, however, a challenge for such experiential learning.

4. Conclusions

Social media and other online learning tools, including Moodle, can be combined for increasing personal knowledge management skills of students. The role of each combined application can be interpreted with the help of the amended version of Kolb (1984) experiential learning cycle. When creating the experiential learning paths of learners, it is useful to take into consideration the readiness of the learners for co-creative entrepreneurship, their online knowledge sharing experience and their disposition to trust co-operation partners in cyberspace.

A comparison of different learning tools reveals not only the positive implications of social media applications but also the challenges of learning modes that change the balance between the intended academic learning outcomes and choices made by learners. Combinations of social media and more traditional e-learning tools foster the diversity of knowledge sources. Both the learning platforms and the minds of learners have to be opened up to new connections and networking opportunities.

Further research is needed for experimenting with larger samples of students and for applying these tools within comparable time frames. In the context of deliberation and self-regulation as features of social media applications, an issue for further research would be the amount of detailed guidance the academic staff should offer for team formation, for choosing online networking tools, for specifying the regularity of their online communication and for establishing their roles in teams.

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Civic Conversations and Citizen Engagement – A New Framework of Analysis for Web 2.0 Mediated Citizen Participation

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Abstract: This paper outlines a research agenda that introduces a distinctly sociological framework of analysis for understanding the role played by social media (in the English context) in re-shaping the nature of localized political/civic engagement between citizens and local authorities. Amidst heated contemporary policy debates about the shifting roles and responsibilities of local government and subsequent citizen-state relations, it is timely to ask if Web 2.0 platforms such as Facebook and Twitter afford opportunities for new forms of interaction – characterized here as 'civic conversations'. The critical framework we propose explores the deployment of these platforms in terms of their potential to encourage distinctive forms of participation that might bridge the divide that has emerged in recent years between citizens as consumers of local services and citizens as local democratic actors. This framework has been informed by both initial evidence of such civic conversations in a nationwide survey of English local authorities (Ellison and Hardey, 2013) and also the day-to-day policy and practice challenges emerging from detailed local authority case study scoping (in 2013) with regard to relations between social media use, citizen engagement and localized political praxis. Specifically this framework asks - if such civic conversations exist - what impact, if any, might they have upon stubborn citizen engagement issues such as accessibility, depth of representation, tokenism, poor citizen feedback, consultation fatigue, democratic deficit and inequalities of power within state-shaped platforms of engagement? In this paper we outline: the theoretical debates from which this approach to analysis emerges; the social policy and broader sociological questions that constitute the framework; and finally we highlight themes from initial empirical findings concerning the risks, opportunities and practical implications of this emergent form of citizen-state interaction.

Keywords: social media; citizen engagement; local government; civic conversations

1. Introduction

This paper introduces a framework of analysis to help inform policy development and research questions concerning the relationship between a rapidly maturing social media ecology (Future Identities Report, 2013) and the shifting nature of citizen/(local) state relations within a public sector austerity and localism context (Lowndes and Pratchett, 2012). More specifically, the framework has been developed to explore the potential and risks of the use by local government of social media platforms to engage local citizens in the development of what Ellison and Hardey, (2013) describe as 'civic conversations'. As an innovative point of entry into the evaluation of rapidly shifting and contested local citizen-state relations the concept of 'civic conversations' is used to illuminate hitherto under-researched social processes concerning the nature and consequence of a meso-space of engagement that we argue may exist between the citizen as service consumer and the traditional narrow engagement of citizens with liberal democratic institutions, for example, through local or national elections (Ellison and Hardey, 2013).

The next section of the paper outlines the dominant areas of investigation researched by the academy in relation to social media and political engagement in order to reveal the areas that might be usefully explored through the alternative framework of 'civic conversations'. Here we make the argument based on the survey of all English local authorities by Ellison and Hardey (2013) that there is an under-researched and indeed under-utilized potential meso-space of low-level, but nevertheless important 'civic conversations' between local government and citizens. It is our belief that such open-ended conversations on local political/civic issues, via social media, require greater critical attention in order to begin to address the neglect by both the academy and policy-makers of these less formally constituted episodes of public participation in relation to their impact upon citizenship and civic engagement (Ellison and Hardey, 2013). This discussion is followed by a more detailed consideration of the proposed framework to illustrate the policy relevance of this analysis in the context of broader debates concerning a neo-liberal post-political consensus in local government (Swyngedouw, 2008), and degraded local politics (Harvey, 1989; Featherstone *et al*., 2012). The paper concludes with themes emerging from detailed local government/voluntary sector scoping meetings in 2013 in three English local authorities for a future research project that seeks to test this framework. This final section

provides an indication of some of the challenges faced by local government in planning and delivering this new route to participation, but also the questions and concerns this route raises for local communities in terms of responsibilization of citizens and equity of engagement and influence.

2. Political citizenship in a mediated society – a synthesis of recent key debates

Research exploring the democratic potential of social media and citizen-state relations has been dominated by two streams of investigation in recent years. The first is concerned with the practicalities and efficiencies of social media as an additional information-providing platform or service delivery medium with evident links to how this contributes to a form of citizenship dominated by practices of consumption (i.e. the citizen consumer) (Newman and Clarke, 2009). This academic and policy focus reflects the fact that 73% of UK Internet users access some form of government service online (Dutton and Blank, 2011). The second focus has been to report on and critique experiences of large-scale government e-democracy models such as national and regional scale consultations, e-petitions and online voting mechanisms (Lindner and Riehm, 2010; Miller, 2009). This model has evolved with the advent of Web 2.0 technologies which are held to offer a more 'open source' (many-to-many) configuration of political engagement with the potential for more deliberative political exchange (Dahlberg, 2001; O'Reilly, 2010; Rheingold, 2000) but perhaps relies on a form of libertarian 'active citizenship' to give it motility. This model is critiqued for its exclusionary practices and the risk of post-political citizenship (Loader and Mercea, 2011; Pajnik, 2005). While these are all important elements of the relationship between the state and citizens, as mediated by social media and Web 2.0 technologies, there is much less said about the day-to-day potential for civic conversations at a local government level (Ellison and Hardey, 2013). We argue that exploring the link between this evolving mode of participation and local government/citizen conversations is key to a more nuanced critical analysis of civic engagement and praxis in England today.

The more utopian aspect of recent thinking about the role of the Internet can be seen in the early research by Norris (1999) and in more reflective but still optimistic work more recently by Dahlgren (2009), Coleman and Blumler (2009) and Zavestoski et al, (2006), all of whom have argued the case for the Internet's democratizing potential. Others have since argued that the naïve optimism of early academic champions and web entrepreneurs was founded on a misplaced faith in the alleged common values of 'transparency', 'universal access' and 'freedom of voice' shared by internet-based communications and aspirations for a progressive Habermasian style deliberative democracy (Dean, 2003; Pajnik, 2005). Nevertheless, this early optimism has been reinvigorated by the arrival of Web 2.0 technology and in particular social media platforms such as Facebook and Twitter (O'Reilly, 2010). The use of social media as a catalyst for acts of real world democratic protest during the Arab Spring in Tunisia, Egypt and Libya 2011/12 have been widely commented upon in this vein (Dutton, 2013; Foresight Future Identities, 2013). Moreover, it has been argued that this second generation technology offers distinctive and new conceptions of the democratic potential of the Internet centered around the networked citizen-user rather than a public sphere model (Dahlgren, 2009; Papacharissi, 2010). This leads some observers (Loader and Mercea, 2011) to wonder if this new model will largely be incorporated into existing everyday power relations, or if indeed through this broader conception of democratic citizenship – 'a less dutiful ... more personalized and self-actualizing notion of citizenship' (Loader and Mercea, 2011: 761) – there are opportunities to challenge dominant discourses and privileged positions.

Pajnik (2005) warns us critical reflection upon the scope of citizenship shaped by a mediated society is central to these debates. Certainly, a number of academic observers have argued that the deployment of the e-democracy model in particular articulates a very thin understanding of political citizenship that is tied to voting and elections only (Coleman and Blumler, 2009). In addition, it is observed that this model of communication also fails to attract the attention of under-represented groups (Lindner and Riehm, 2010) thus replicating the issues of democratic deficit and inequalities of access that plagues real world political participation (Taylor, 2007). Perhaps a more integral concern for the capacity of social media to enable political dialogue is the dominant use of the web as a marketplace shaped by market laws rather than a place of democratic politics which it is argued encourages consumer attitudes and a search for individualized solutions to problems rather than fostering association or collective political action (Wellman *et al.* 2003). Yet Ellison and Hardey (2013: 13) would argue that this is not the only potential outcome with evidence in their research of social media facilitating 'interaction between local councils and citizens, this interaction taking the form of more or less extended 'conversations' hosted, but not dominated by local authorities'. By opening up the analysis of this space to previously absent or unobserved forms of engagement the critical reflection of citizenship at the local scale is expanded to consider whether civic conversations erode or compound these individualized and

exclusionary trends, or if the social media model is evolving to allow for new more inclusive and open political dialogue.

3. Civic conversations – towards a new framework of analysis

Civic conversations between citizens and local government are characterized by their informal, flexible, open-ended and day-to-day nature (Ellison and Hardey, 2013). These are dialogues about local civic issues ranging from service quality, through the social justice implications of service cuts, to wider issues of democratic representation and the structure of local governance. The policy, planning and political implications for this form of engagement lead to currently unanswered (social) policy questions in the English context that form the outline of this analytical approach and prompt the following questions. When and where (i.e. which social media platforms and in which communities) are civic conversations emerging and why? What are the issues triggering these conversations? Who does and does not partake in this dialogue (in terms of both citizens and members of local government), and why? What challenges/ barriers do both local government personnel and citizens face in order to engage in this form of conversation? What new expectations or demands does this create for local politicians, civil servants and citizens in terms of the practical delivery and future forms of local civic engagement and participation? What is the impact for both citizens and local government of (not) engaging in this space? How does this form of engagement complement, supplement, hybridize or displace traditional routes to participation such as town hall meetings? Finally, and importantly, what do these answers mean for the equality of engagement in local politics?

By exploring in detail contemporary examples of local government use of social media to engage citizens the authors seek to understand further the critical space between the optimism of some libertarian commentators and the cautionary tales of the post-political counter-argument. Building on the thesis developed by Ellison and Hardey (2013) the proposed research project will explore the social power implications, practical possibilities and challenges that are likely to be associated with civic conversations at local level. While Ellison and Hardey (2013) found through their survey of all 352 English councils that local authorities are largely failing to engage with social media in any substantive manner, they also found some clear pre-figurative examples of social media use that amounted to what they describe as an 'embryonic form' (p.1) of civic conversation. They detected in certain local authorities Facebook interactions that had the character of bottom-up, less formally constituted open-ended conversations between local government personnel and citizens. Given the context of a broadly degraded local politics (Evans *et al.,* 2009), the rapid increase in use of social media in a liquid modern (Bauman, 2000) or networked society (Castells, 2011) and central state pressures to employ localist agendas, the research questions outlined above have been developed to explore whether civic conversations might offer a new response to familiar difficulties associated with citizen engagement and, if so, whether they might lead to new practices of social and political citizenship and a rearticulation of citizen-state relations.

4. Testing the 'civic conversations' analysis: emerging themes

"Developing Civic Conversations? Exploring social media use and citizen participation in English local government" is a research bid that has been co-developed by a partnership of local authority communications practitioners, third sector leaders and the authors. The objective of this project is to test the civic conversations framework via in-depth case studies to map and analyse the contemporary use of social media by three English local authorities (LA) in order to gain an understanding of their potential impact on the nature of citizen engagement, emerging forms of 'active' citizenship and shifting citizen-state relations in the context of the British government's current localist agendas.

In building the research partnership and through initial scoping meetings with the partners it has become evident that, owing to an absence of contemporary evidence upon which to base policy decisions, there is a real appetite for gaining a fuller understanding of the engagement potential of local authority social media use and the relations and cultural norms this disturbs or develops within local politics. Below we outline emerging themes from the project scoping meetings with local authority and third sector partners, and reflect on what these might mean for the 'civic conversations' analysis detailed above. We also consider how these compare to the results of recent large scale local government surveys on the use of social media by local government for citizen engagement purposes in both England (Spurrell, 2012) and Australia (Purser, 2012).

In common with the Spurrell (2012) and Purser (2012) surveys our partners have all indicated they are using social media to engage citizens in a number of forms (predominantly via Twitter and Facebook), but are aware

(in line with the Ellison and Hardey (2013) findings) that they are not fulfilling the potential of this medium of engagement. One partner acknowledged that as a sector local government is largely stuck in 'broadcast' mode and not fulfilling what he described as its 'transformative potential'. One concern raised in scoping meetings in this respect has been that a great deal of social media communication is still originating from the local government communications teams. Partners felt a barrier to a more progressive employment of social media can often be caused by a fear within local government about who 'manages' social media communications and controls the 'message'. This is highlighted in other surveys and wider commentary as being a direct barrier to accessing the full potential of open and transparent dialogue between local councils and citizens (Purser, 2012; Shewell, 2011; Spurrell, 2012; The Young Foundation, 2010). That said in all three case studies both council officers and councillors currently use social media (and there is an appetite to spread the extent of this use), however, there is an anxiety about the potential difficulties created when that goes 'wrong', with examples of councillors making inappropriate comments in online public forums and the damage limitation subsequently required. Despite these control barriers the existing areas covered by social media use already includes the political process itself with one council introducing web-streaming of local authority formal meetings and a Twitter wall at the meeting to extend the dialogue via questions from Twitter users. While in another LA recently introduced live uncensored Facebook 'Question and Answer' sessions with local Councillors has generated considerable interest from local citizens. It was evident throughout the initial scoping that social media will play a role in future efforts to address local government concerns regarding citizen disengagement and disenfranchisement from the local political process. The Purser (2012: 8) Australian survey showed 25% of councils 'believed that social media would specifically assist them to engage with hard to reach segments of the community including youth, those with disabilities, seniors and time poor families'. All of our partners are looking to gain insight into which citizens within their diverse demographic are using this form of engagement and why – and perhaps more importantly who is not, and why. While all three case studies can see an increase in the scale of their social media following, the concern at this stage is that their followers are the usual vocal white middle class groups that have transferred their political interests and energies to social media platforms. This evidently needs further critical attention to explore how social media might be eroding or embedding pre-existing barriers to engagement.

In terms of extending who is using social media beyond the communications team partners noted that as a younger, more 'media-savvy' generation of councillors came forward, fears about the potential damage to the council's reputation from loose or inappropriate comments were beginning to diminish. Indeed our partners confirmed that they expect social media to play an increasing role in local politics, which provides further evidence of the growing impact that a 'digital by default' Generation C (Future Identities Report, 2013; Shewell, 2013) is having on the nature of local government-citizen dialogue. However, this shift is clearly by no means a painless or even process with examples described of different political cultures experiencing early clashes. For example, LA and third sector partners described resistance from some older council members and the tensions created as new political norms associated with increased transparency, pace, and accessibility of social media communications emerge.

Partners described how the discomfort of some LA members with Web 2.0 cultural norms became explicit in examples where the political conversation was not initiated or hosted by the local council but instead through neighbourhood websites. The fear for some third sector partners is that local government social media use, if it is controlled too tightly, will simply reproduce the practices of poor citizen engagement that has plagued local government in the UK for some time (Evans and Jones, 2008). Of course, political/cultural clashes have also emerged where councils/councillors have received aggressive and personal attacks on Twitter or Facebook – the traditional rules of courtesy and diplomacy that shape (some) off-line political debate appearing to them to be absent in the world of informal online conversations (see Pajnik, 2005 and Sennett, 2012). Learning how to handle this in an open and positive way is clearly a challenge for participants of this form of interaction. And yet all partners have provided examples of where this challenge had been handled well, or where the use of social media by the council to communicate with citizens had a very 'humanising' effect where more formal modes of engagement had often alienated citizens. This was an observation echoed in the Purser (2012) survey and also in UK case studies described by BDO Local Government (2012).

Interestingly all three case studies from a council and third sector perspective observed that practical emergency communications via social media between the LA and citizens (for example during localised floods and snow blocked roads) was acting as a catalyst for further engagement at a more political and strategic level. This element of engagement around the delivery of services is an experience the third sector partners in

particular are building upon in all areas of service delivery and needs-based consultation. For example, one third sector partner explained that they are increasingly finding that normal partnership modes of engagement based around traditional forms of democratic dialogue are quickly becoming moribund as citizen volunteers want more fixed time /fixed topic projects rather than the slower moving deliberations associated with lengthy consultation periods or (equally lengthy) citizens surveys. In this respect it was felt that the Internet (and social media in particular) can offer the potential for rapid engagement. Further, third sector partners expressed concerns over the time premium for 'active citizens' and the dangers of consultation fatigue. This was brought into sharp focus by the centrality of citizen engagement for the success of the UK Coalition government's localist agendas (Lowndes and Pratchett, 2012). In this respect partners were hopeful that social media based public engagement in local government decision-making would have the potential to ease some of this pressure with its more informal tone, temporal and place-based flexibility, cost-savings, ease of access to information and rapid response potential. Of course this form of engagement and the liquid modern logic of social media encourages the mixing of citizen consumer and political citizenship praxis in the style of 'new public management' that Sunstein, (2007) and others warn against. Ellison and Hardey (2013: 894) suggest that we 'accept this de facto elision' and further accept that this is a way of creating a space for 'citizens to engage if they choose to do so, hear others' views, and receive responses directly from elected members' in a prompt and timely fashion. In this way social media practice and norms may remedy some of the issues with off-line engagement that leaves citizens feeling their view has no impact upon local decision-making.

5. Conclusion

As we have outlined above, different assumptions exist about the types of participation that social media might facilitate (Anduiza et al. 2009; Benkler, 2006; Loader and Mercea, 2011; Pajnik, 2005). On the one hand, some observers are primarily interested in 'non-reciprocal' forms of communication such as 'e-government' and e-petitioning as means of linking citizens into the public sphere (Margetts, 2006, 2009; Wright, 2006). On the other hand, 'Habermasian' portrayals of the online world take a more dialogic view that acknowledges the potential for extensive online engagement (Dahlberg, 2001, 2011; Dahlgren, 2009; Rheingold, 2000, 2012) – a view arguably boosted by the increasingly flexible and mobile forms of communication introduced by Web 2.0 platforms such as Facebook and Twitter from 2006 onwards. However, if the e-government/e-petitioning perspective does not give too much credence to the communicative potential of social media, the Habermasian approach risks overestimating citizens' inclination for extensive, in-depth social and political dialogue (Hindman, 2009; Ellison and Hardey, 2013). Ellison and Hardey suggest that, rather than being platforms that are likely to facilitate the kind of democratic dialogue associated with civic republican conceptions of publicity (Sandel, 2010; Miller, 2000) for example, social media may have the potential to foster less 'sophisticated' but nevertheless meaningful civic conversations – flexible, open-ended dialogues about local issues. These 'civic conversations' cannot satisfactorily replace the (slow-moving) structures and institutions of liberal democracy, but can complement and add to these formal structures by providing opportunities for engagement with local authorities that could reduce existing communication barriers, particularly perhaps for 'hard to engage' groups.

Currently, the majority of local authorities are some way from being able to organize and host sustained forms of social media-driven conversation – but a few are beginning to explore the possibilities this form of communication might offer. Given that hyper-connectivity, particularly through mobile technologies, has been identified as one of the key factors shaping citizen identity and practices in the UK over the next decade (Foresight Future Identities report, 2013; Beer and Burrows, 2007), what is understood by citizenship – certainly in the local context – is likely to go beyond voting and the traditional institutions of liberal democracy (Dahlgren 2009; Coleman and Blumler, 2009; Papacharissi, 2010). It is here that civic conversations could have significant potential, although whether the fostering of such conversations among local populations is a feasible strategy for local authorities and, if it is, how it should be pursued needs to be considered carefully. Through the research proposed here attention needs to be paid to the risks associated with civic conversations, not least the well-known exclusionary tendencies associated with social media (Chadwick, 2009; Pajnik, 2005), as well as the potential they may hold for enhanced citizen participation. In developing this research project centred around the concept of civic conversations we are better able to understand if the citizen norms this facilitates encourages alternative practices of (political) citizenship. This line of enquiry introduces broader research questions concerning the potentialities of a new local politics aligned to a restructured citizen-local government relationship facilitated in part by openly engaging with citizens in a reconstituted – and 'conversational' – local public sphere.

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Using Social Media To Inform Policy Making: To Whom are we Listening?

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Abstract: Domination of social media is giving today's web users a venue for expressing their views and sharing their experiences with others. With well over a billion active users, social networking sites (SNS) have become dynamic sources of information on peoples' interests, needs and opinions and are considered an extremely rich source of content to reach out to many millions of people. This is creating a revolutionary opportunity for governments to learn about the citizens and to engage with them more effectively. The potential is there for eParticipation applications to go from simply informing the public to unprecedented levels of interaction and engagement between Policy Makers (PMs) and the community, involving the public in deliberation processes leading to legislation.Despite its great potential, several concerns arise from the exploitation of social media, especially when used to inform policy making. Among these issues we can highlight *the lack of awareness of the characteristics of those citizens discussing policy topics in social media, and lack of awareness of the characteristics of their discussions*. Although some studies have emerged in the last few years that aim to capture the demographics of social media users (e.g., gender, age, geographical locations) they tend not to focus on those specific users participating in policy discussions. Understanding who are the users discussing policy in social media and how policy topics are debated could help assessing how their views and opinions should be weighted and considered to inform policy making.Aiming to provide a step forward in this direction, this paper investigates the characteristics of over 8K users involved in policy discussions in Twitter. These discussions were collected by monitoring, for one week, 42 different political topics selected by sixteen PMs from different political institutions in Germany. Our results indicate that: (i) a high volume of conversations around policy topics does not come from citizens, but from news agencies and other organisations, (ii) the average user discussing policy topics in Twitter is more active, popular and engaged than the average Twitter user and, (iii) users engaged in social media conversations around policy topics tend to be geographically concentrated in constituencies with high population density. Regarding the analysed conversations, a small subset of topics is extensively discussed while the majority go relatively unnoticed.

1. Introduction

Governments have traditionally made use of eParticipation platforms to engage with citizens, to obtain their views and opinions, and to involve them in policy debates. However, several studies have observed that the use of specific online government services is remarkably low (Miller & Williamson, 2008; Dutton & Blank, 2011) and that users produce deliberations on exiting web platforms that are more familiar to them. One remedial strategy that many western governments are increasingly adopting is the use of popular social media systems to reach out to the public and to involve them more effectively in policy-making dialogues.

According to The IBM Center for The Business of Government "Next Four Years: Citizen Participation" (IBM, 2012) published in October 2012, more and more people are turning to social media to discuss their political views. However, while social media has the potential to improve the quality and timeliness of the evidence base that informs public policy (Leavy, 2013), several concerns arise from its usage. In September 2012, the Handsard Society (http://www.hansardsociety.org.uk/), the UK's leading independent political research and education charity, organized an event in Westminster where a panel of stakeholders discussed the underlying issues of using social media to support policy making (http://www.bbc.co.uk/news/uk-politics-19555756). One of the key issues that emerged from those discussions was *the lack of awareness of the characteristics of those citizens discussing policy topics in social media:* Who are those users? What are their main concerns or topics of interest? What is their location/constituency? Understanding who are the users discussing policy in social

media, and what are the general dynamics and relevance of policy debates around different topics can help PMs decide to which level the social media dialogs represent public opinion and should be used to inform the policy making process.

To this end, this paper investigates Twitter discussions around 42 different policy related topics and the characteristics of the 8,296 users involved in those discussions. The 42 topics were selected by sixteen PMs who are members of different political institutions in Germany. We selected Twitter for this study because of its popularity and reach (http://www.alexa.com/topsites), counting over 500 million registered users contributing over 400 million tweets daily.

Our results show that a small percentage of users are responsible for most of the generated discussions (*less than 6% of the users are responsible for more than 36% of all the collected tweets)* and that these users are mainly news agencies and organisations and not individual citizens. Our results also indicate that the average Twitter user discussing policy topics is more active, popular and engaged than the average Twitter user and tends to be geographically concentrated in constituencies with high population density. Similarly to users, a small subset of topics is extensively discussed but most of the topics are under represented.

The rest of the paper is structured as follows: Section 2 describes existing work intended to characterize users and policy debate in social media. Section 3 describes the data collection process and the final dataset used for this study. Section 4 explains the analyses performed over the data and the extracted insights. Section 5 presents our conclusions and outlines future work.

2. Related Work

Statistics about the citizens' participation on ePlatforms are studied regularly. These statistics are computed globally (E-Gov Survey, 2012), at group level (http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/E-government_statistics#Publications), and for individual countries (http://www.hansardsociety.org.uk/wp-content/uploads/2012/10/Digital-Citizens-and-Democratic-Participation-2010.pdf). While such studies highlight the benefits of eParticipation platforms, they also indicate that participation via specific online government services is generally low. The last report of the United Nations (E-Gov Survey, 2012) points out that within the 27 EU countries, only 32% of individuals aged 16 to 74 have used the Internet for interacting with public authorities. These reports also emphasize the need of using social media to improve public services, reduce costs and increase transparency.

Several studies have been conducted that investigate the characteristics of users participating in social media (Madden, 2010; Poblete et al., 2011; Honigman 2012; Beevolve 2012). Regarding Twitter, the SNS selected for this study, Beevolve concluded that: (i) there is 6% more of women than men in Twitter, (ii) 75% of users fall between 15 to 25 years of age and, (iii) the average Twitter user follows 102 users, is followed by 50 users and post 307 times during her Twitter life. While these works extract important insights and demographics *they aim to characterise the average social media user, and not those particular users engaged with policy debates*. A deep review of the use of social media for eGoverment can be found in (Magro, 2012). While this review includes a historic overview of the use of social media for eGoverment, none of the works referenced in this study investigates the characteristics of those users participating in policy discussions.

Additionally, some works have studied the dynamics of policy discussions in social media. However, policy discussions have been analysed in the context of concrete political events, such as elections (Adamic & Glance, 2005; Tumasjan et al., 2010; Conover et al., 2011) or revolutions (Aday, 2010; Bhuiyan, 2011). While these works focus on analysing debates around a particular event our goal is to provide an overview of how policy topics are discussed; which topics are more interesting for the general public and what is the level of positive and negative sentiment expressed about those topics.

3. Data Collection and Processing

To support Policy Makers (PMs) to analyse policy discussions in social media it is important to understand first what are the key topics from which they would like to obtain the citizen's opinions. Following this premise, we contacted 16 PMs, all members of different political institutions in Germany: the German Bundestag, the State Parliament North Rhine-Westphalia, the state Chancellery of the Saarland and the cities Cologne and Kempten.

Each of these PMs indicated four or five topics that were of particular interest to them, generating a total of 76 policy-related topics including issues such as nuclear power, unemployment, or immigration. We filtered 34 out of the 76 initial topics, remaining with at total of 42. The purpose of the filtering process was to discard very generic topics such as "women", which led to the collection of Twitter discussions not related to policy topics. This filtering process allowed us to reduce the noise of the collected data sample. Table 1 shows the filtered list of topics, available as part of the released dataset (ECSMDataset, 2014). Please note that these topics were selected by German PMs and therefore, all of them are expressed in German language, the English translation is provided for convenience.

Table 1: Filtered topics and their corresponding English translation

Topics	English translation	Topics	English translation
Betreuungsgeld	Care Benefit	Nichtraucherschutz	Non Smoking Protection
Bildungspolitik	Education Policy	NPD-Verbot	NPD Ban
Bürgerrechte	Civil Rights	Open Government	Open Government
Castorbehälter	Castor Containers	Parteispenden	Political Donations
Datenschutz	Privacy Policy	Praxisgebühr	Practice Fee
Energiepolitik	Energy Policy	Rauchverbot	Smoking Ban
Europapolitik	European Policy	Rechtsextremismus	Right-wing
Finanzpolitik	Fiscal Policy	Schuldenbremse	Debt Brake
Fracking	Fracking	Schulreform G8	School Reform G8
Frauenquote	Women's Quota	Solidarpakt West	Solidarity Pact West
Generationengerechtigkeit	Intergenerational Equity	Sozialpolitik	Social Policy
Gentechnik	Genetic Engineering	Sozialticket	Social Ticket
Gleichstellung	Equality	Studiengebühren	Tuition
Harz4	Fourth law to reform the rendition of services on the job market	Tempolimit	Speed Limit
		Verbraucherpolitik	Consumer Policy
		Verkehrspolitik	Transport Policy
Innenpolitik	Domestic Policy	Verteidigungspolitik	Defence Policy
Kohlekraftwerk Datteln	Coal Power Plant Dates	Umweltpolitik	Environmental Policy
Kommunale Grundversorgung	Municipal Primary Care	Urheberrecht	Copyright
Linksextremismus	Left-wing Extremism	Volksbegehren	Referendum
Migranten	Migrants	europäische	European
Mindestlohn	Minimum Wage		
Netzpolitik	Network Policy		

3.1 Obtaining Policy Related Tweets

To investigate the characteristics of users discussing policy topics in social media we monitored a sample of the Twitter population. We collected users and posts via the Twitter search API (https://dev.twitter.com/docs/api/1/get/search) using as queries the topics described in Table 1. We restricted the collection to German language to avoid gathering noisy information. The sample was collected during a week, starting on 4th of January 2014 and finishing on 12th of January 2014. The collected dataset consists of 17,790 posts originated from 8,296 different users. For both, users and posts, we extracted the set of features provided by Twitter and computed an additional set of features to conduct the analyses presented in this paper. The complete set of features is listed below:

User Features

To analyse the characteristics of each particular user and his role in the conversations around policy topics we extracted the following features:

- *Number of posts*: number of posts that the user *u* has written since his/her registration on Twitter

- *Post rate*: Number of post per day created by the user *u* since her registration on Twitter

- *Number of policy posts*: number of posts generated by the user *u* in our sample dataset

- *Initiations*: number of conversations that the user *u* has initiated in our sample dataset

- *Contributions*: number of conversations in which the user *u* has participated (reply) in our sample dataset

- *Followers*: number of users who follow the user *u* (a high number of followers indicates high popularity)

- *Friends*: number of users that the user *u* follows (a high number of friends indicates high engagement)

- *Location*: location that the user *u* specifies in his Twitter profile

- *Description*: description that the user *u* specifies about himself in his Twitter profile

Note that demographic information such as age, or gender is not available via the Twitter API.

Content Features

To analyse the characteristics of Twitter content around policy topics we extracted the following features:

- *Sentiment*: sentiment polarity and strength of the post *p* computed using the SentiWordNet German lexicon (http://www.ulliwaltinger.de/sentiment).

- *Mentions*: the users that are mentioned within the tweets (mentions are identified by the symbol @)

- *Hash tags*: the topics that are explicitly mentioned within the tweets (hash tags are identified by the symbol #)

4. Data Analysis

The following section presents the analyses performed over the collected data. The first analysis studies the characteristics of Twitter users discussing policy related topics. The second analysis investigates the dynamics of debates around policy topics including topic popularity and users' sentiment in relation to these topics.

4.1 Users Demographic and Behavioural Characteristics

The purpose of this analysis is to characterise those users discussing policy topics in Twitter. Figure 1 shows the distribution of users per number of posts, which presents a long-tail pattern. According to this distribution only a small proportion of the users generates a high number of posts (head) while the majority of the population contributes with less than 6 posts (long-tail). Users appearing in the head section of this distribution are responsible of 36% of the generated content of our data sample. We will refer from now on to this part of the population as "top contributors" for the rest of our analysis.

Figure 1: Distribution of users per number of posts
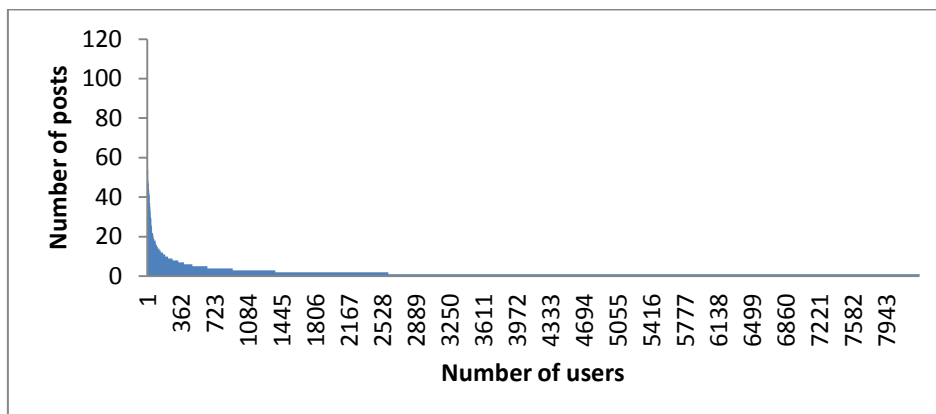
The average top contributor has 4,279 followers, 1,028 friends and has posted 33,134 times during his life in Twitter. Figure 2 displays the tag cloud of the top contributors' names. Among these top contributors we identify multiple organisations and news agencies such as Demokratie Report, Anonymous Germany, DTN Germany, Svejk News, Netz4ktivisten, TimesDailyNews, Voice Dialogue and others. We have manually assessed the user accounts that belong to the group of top-contributors and 73.4% of them do not represent individual citizens but news agencies and other organisations. We can therefore conclude that *policy discussions are led by a small subset of active Twitter users that do not represent individual citizens but news agencies and other organisations*.

Figure 2: Names of the top contributors

The long-tail of the distribution (the remaining 94% of users) presents an average of 1,365 followers, 630 friends and 9,578 posts during their Twitter life. These numbers are still higher than the ones reported for the average Twitter user (Beevolve 2012), which follows 102 users, is followed by 50 users and posts 307 times during her Twitter life. These results provide an indication that *the users contributing to policy topics are more active, popular and engaged than the average Twitter user.*

In addition to this analysis we have also investigated how users are geographically distributed. For this purpose we extracted the locations specified within the profiles of the collected Twitter users and geocoded them (extracted the latitude and longitude coordinates) by making use of the Google Maps API (https://developers.google.com/maps/). Figure 3(b) displays the geographic distribution of users: in yellow those locations with less than 10 users, in pink those locations with 10 to 50 users, and in red, those locations with more than 50 users. As expected, the higher concentration of users occurs in constituencies of high population density such as Berlin, Hamburg, Munich and Koln in Germany, Vienna in Austria, and Zurich in Switzerland. To investigate whether these locations are similar to the ones from which citizens engage in eParticipation platforms we compared this map with the distribution of eParticipation projects in Germany (https://www.politik.de), Figure 3(a). Since we could not find concrete statistics about the geographical distribution of users engaged in eParticipation platforms in Germany, we made the assumption that the regions with higher number of eParticipation initiatives are also those ones where more users are engaged. Note that, while user statistics of eParticipation are available for Germany at country level (E-Gov Survey, 2012; http://www.bertelsmann-stiftung.de/cps/rde/xbcr/bst/xcms_bst_dms_31401__2.pdf) we haven't found any document reporting similar statistics at regional level. To map the locations of Twitter users within the 16 regions specified by https://www.politik.de (Babaria, North Rhine Westphalia, Baden-Wurttemberg, etc.) we have made use of the region bounds provided by the Google API. The Pearson correlation coefficient between the number of Twitter users and the number of eParticipation projects in each region is 0.817. This indicates that *users engaged in social media conversations around policy topics tend to be geographically concentrated in the same regions than users engaged in eParticipation platforms.*

4.2 Dynamics of Policy Debates

The purpose of this particular analysis is to understand how are policy topics represented in the policy discussions happening in social media and what is the overall sentiment about these topics. To extract the representativeness of policy topics (in terms of quantity of posts and users involved in the discussions) we first obtain the subsets of posts collected for each of the 42 topics and then identify the creators of these posts. To obtain the representativeness of positive and negative sentiment for each particular topic we compute the sentiment for each individual post associated to the topic and then extract the authors of those posts. This can give us an overview of how the opinions in favour and against policy topics are represented in the discussions. To compute the sentiment of the posts we use the SentiWordNet German lexicon (http://www.ulliwaltinger.de/sentiment). To extract the terms from the posts and map them to this lexicon we use

the Lucene (http://lucene.apache.org) text processing tools for German Language, in particular the German stopwords removal and tokenizer. The results of this analysis are shown in Table 2.

(a) Distribution of eParticipation projects	(b) Distribution of Twitter users
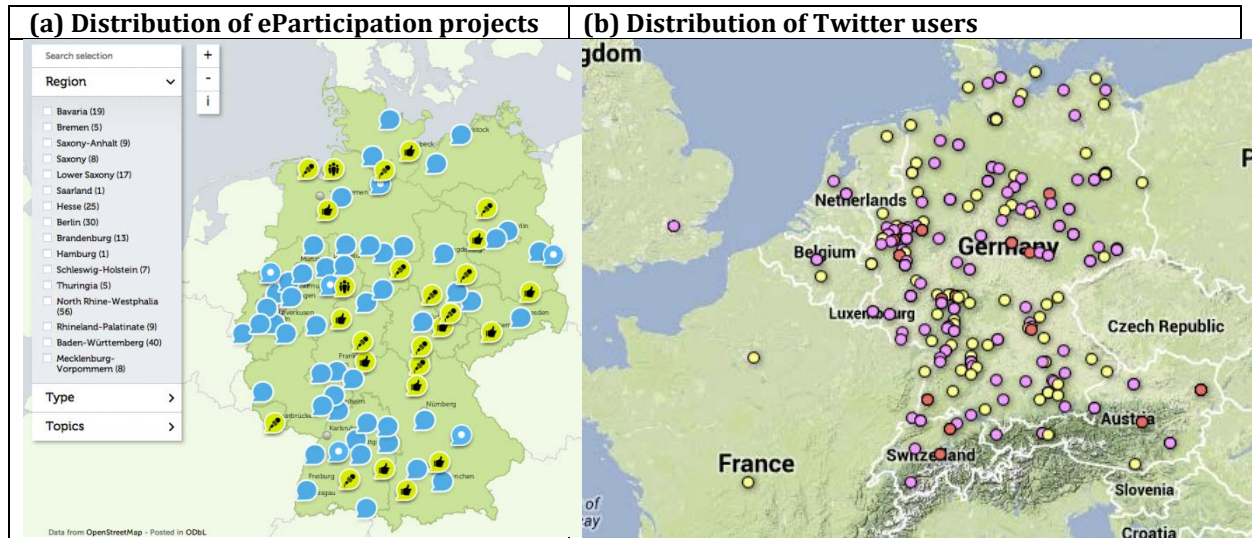
Figure 3: (a) Distribution of eParticipation projects in Germany (http://www.politik.de/politik-de/projekte_entdecken/beteiligungskarte) (b) Distribution of Twiter users: yellow are locations with less than 10 users, pink are locations with 10 to 50 users, red are locations with more than 50 users

Table 2: Representativeness of topics. For each topic the table includes: (1) its English translation, (2) the total number of posts about the topic, (3) the total number of users contributing to the topic, (4) the number of positive posts about the topic, (5) the number users contributing positively to the topic, (6) the number of negative posts about the topic, (7) the number of users contributing negatively to the topic, (8) the number of neutral posts about the topic and (9) the number of users contributing neutrally to the topic.

Topic	Posts	Users	+Posts	+Users	-Post	-Users	NPost	NUsers
privacy	3439	2130	491	404	404	361	2544	1629
network policy	3250	1615	515	392	323	262	2412	1271
minimum wage	2598	1558	683	578	285	240	1630	979
copyright	1297	954	221	183	68	62	1008	788
fracking	1079	688	236	191	194	174	649	431
domestic policy	910	478	175	146	108	79	627	323
genetic Engineering	808	454	72	57	82	51	654	410
Harz4	632	351	100	78	34	30	498	281
migrants	601	494	139	130	143	127	319	270
equality	536	421	164	145	33	30	339	280
female ratio	416	370	217	203	23	22	176	156
right wing	306	221	85	84	28	24	193	127
referendum	300	223	30	26	108	98	162	129
left wing extremism	245	199	50	49	26	25	169	142
education and training policy	235	213	94	88	39	38	102	98
energy policy	185	146	35	30	33	28	117	98
european policy	139	128	22	22	25	24	92	84
party donate	110	100	4	4	7	7	99	92
social policy	107	77	25	21	13	11	69	50
speed limit	75	66	5	5	13	10	57	52
financial policy	74	68	20	20	4	3	50	47
no smoking	70	66	16	16	4	4	50	48
care money	66	61	10	10	1	1	55	50
transport policy	61	54	15	15	3	3	43	37
generational justice	55	54	13	13	2	2	40	40
debt brake	51	45	6	6	6	6	39	34

environmental policy	43	39	8	8	3	3	32	30
npd ban	36	24	3	3	19	7	14	14
non smoking shelter	35	35	4	4	7	7	24	24
socially ticket	28	21	1	1	4	4	23	16

Our analysis shows that 30 out of the 42 collected topics were discussed during the monitored week. The posts distribution per topic is displayed in Figure 4. As we can see in this figure, *few topics are extensively discussed* during the analysed period, such as privacy, network policy, minimum wage, or copyright, *while the majority of topics are underrepresented*.

Figure 4: Post distribution per topic

This topic distribution is also reflected in the hashtags used within the Twitter conversations. Hashtags are metadata tags that Twitter users include in their posts to explicitly indicate the topics under discussion. As we can see in Figure 5 the most popular hashtags of our dataset include privacy, minimum wage, copyright, fracking or genetic engineering, which are among the most popular topics in terms of frequency of associated posts.

Figure 5: Hashtags extracted from the collected dataset

Regarding the sentiment around the collected topics, we have highlighted in red (Table 2) those topics for which the number of negative contributions is higher than the number of positive contributions. Among these

topics we find genetic engineering, immigration, the possibility of a referendum, donations to political parties or the speed limit. The rest of the monitored topics present a slightly higher number of positive than negative tweets. Note that there is a high percentage of neutral posts for each topic. These posts are those for which the sentiment lexicon could not assign any polarity (positive or negative) because the vocabulary of the posts was not covered by the vocabulary of the lexicon. As future work we plan to apply other German-based sentiment analysis tools that can help us to increase the level of coverage. It is also important to highlight that some topics present a high volume of posts around positive and negative opinions, i.e., they are notably controversial. Among these topics we can highlight privacy, fracking, or domestic policy.

As a measure of user engagement in conversations around policy topics we have analysed the reply chain of the collected conversations. 45% of the collected posts in our dataset are replies to previously initiated discussions. Contrasting this result with earlier studies based on different collected Twitter datasets (http://www.sysomos.com/insidetwitter/engagement/), where a maximum of 23% of posts where replies, this percentage of engagements in discussions is comparatively high, i.e., *users that engage in policy discussions in Twitter more actively than in other topics.*

5. Conclusions

Understanding who are the users discussing policy in social media and how policy topics are debated could help PMs assessing how their views and opinions should be weighted and considered to inform policy making. This paper aims to provide a step forward in this direction by analysing 8,296 Twitter users discussing policy topics in social media. These discussions (17,790 Twitter posts) were collected by monitoring, for one week, 42 different topics selected by sixteen PMs from different political institutions in Germany.

We analysed the different types of user groups discussing policy topics as well as their geographical distribution. Our results show that a small percentage of users (top contributors) are responsible for most of the generated discussions (around 6% of users are responsible of 36% of the conversations). 73.4% of the top contributors are not individual citizens but news agencies and other organisations. Our results also show that the Twitter user discussing policy topics is more active, popular and engaged than the average Twitter user. Regarding the geographical distribution of these users we have observed that: (i) they tend to be concentrated in locations with high population density and, (ii) they tend to be concentrated in the same regions than users engaged in eParticipation platforms.

We have also analysed the popularity and sentiment of the different conversations around policy topics. Our results indicate that a small subset of topics is extensively discussed (privacy, network policy, minimum wage, copyright, etc.) while the volume of conversations is relatively low for the rest of the topics. Regarding the analysed sentiment, the topics accumulating a higher percentage of negative comments include: genetic engineering, immigrants or the possibility of a referendum. While most of the analysed topics present a higher number of positive than negative comments, some of these topics are particularly controversial. It is also important to notice that the sentiment lexicon used in this study did not provide sufficient coverage and a large percentage of tweets were not assigned any sentiment. As future work we plan to investigate other German-based sentiment analysis tools that can provide higher coverage.

While we are aware that this is confined study and that the obtained conclusions may seem of little surprise we have, by analysing real data, observed who are those users discussing policy in social media. The top conclusions of our study include: (i) a high volume of conversations around policy topics does not come from citizens, but from news agency and other organisations and, (ii) users discussing policy topics in Twitter are more active, popular and engaged than the average twitter user. As future work we aim to extend the data collection to a longer time period and to study the temporal evolution of discussions around policy topics. As additional contribution of this work we have released the dataset collected for this study (ECSMDataset 2014)

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Comparative Analysis on Personal Learning Environment of Russian and Slovakian Students

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Abstract: Personal Learning Environment (PLE) is defined as software tools, Internet services and the communities, which constitute the individual educational platforms. The learners use these to direct their own learning process and pursue educational goals. PLE is frequently compared with a learning management system (LMS), which tends to be course-centric, whereas a PLE is learner-centric. The concept of the PLE marks a fundamental change in the role of resources (people and media) that play in teaching and learning. The overarching goal of the research is to determine possibilities of using PLE during planning and organization of educational process at the levels of the University and the teacher. Preliminary study made by authors showed the differences in understanding of PLE components depending on ICT landscape in different countries. This paper concerns a number of issues: diagnostic of students' typical scenarios of using PLE; study of the structure and functions of PLE used by Russian and Slovakian students. The results of comparative research achieved through questionnaires and surveys on students' usage of their own PLE, observation and the analysis of students' reflective works. The research included participants consisting of students from Volgograd State Technical University (Russia), Moscow Institute of Physics and Technology (Russia) and Trnava University in Trnava (Slovakia). The benefits of this research outcome will allow the universities to design and plan effectively the implementation of various services that might be used by their students as a part of their PLE. Knowledge on the content and structure of the students' PLE will be helpful for a teacher to plan and organize learning process more effectively. Moreover, highlighting the PLE key tools and services similar in different countries, educators will be able to plan and implement international education projects more effectively.

Keywords/Key Phrases: Personal learning environment, Educational social network, Comparative analysis, Web 2.0, E-learning.

1. Introduction

Contemporary education system all over the world goes through the crisis and seems to be in search of new paradigms. During the global and fast social and economic transformations where the science plays the main role the competency of an ordinary person, his understanding of the processes, independent constructing of social reality have become very topical.

The world transformative processes influence seriously education systems in all countries and at all levels. First of all, it appears in transformation of the main educational model specifically from the model of knowledge to the model of competency which we can over watch in the most of countries. In our research we define at least two factors which determine this transformation process.

The first factor can be named as a social factor and it deals with the influence of society on the education system, especially to its goals and strategies. Hereby, in Russian educational thesaurus the term "productive education" is actively used. It means the effective process of substantive learning in practical situations and learner's own activities. Such a situation is associated with a quite new approach expanded in Russian

education which is called the competency approach. In comparison with West European systems of professional education where the term "competency-based learning" is used, in Russian educational theory and practice the term "competency approach" is commonly used. Such an approach means gradual reorientation of educational paradigm from the translation of information (in Russian pedagogical vocabulary it is called giving the knowledge) to creation the conditions for the development of the complex of competences. This complex of competences is associated with some potential of learners which could help to their sustained living and development in communicative and information-rich economic and social environment. The definition of competence as a key unit of this approach in Russian Federation was suggested by academic of Russian Academy of Education Irina Zimniaya. "Competencies are some internal potential psychological "neoplasms" such as knowledge, representations, values, communicative skills, which appear in person's competent activity". The main issues of the competency-based model of education can be found in the collective essay of authors Shadrikov V., Puzankov D, Fedorov I. and others. In this book authors explain that the model of a competent specialist in contemporary Standards of professional education should not be closely linked to particular object and subject of professional activity. It provides the mobility of alumni in changing conditions of labor market. According to the Russian and oversees researchers, the competency approach demands reorientation of education process from knowledge-centered curriculum to student-centered curriculum, using ECTS (or another compatible system) and modular technologies during education. (Baidenko V., Tatur U., Kohler J, Botteher W).

The second factor which we put in the focus of our research is a factor of conceptual change of generations followed by the rapid development of information and communication technologies. According to some authors, the new generation can be called "Generation Z" (Horovitz 2012, Jackson 2010) or "digital natives" (Schmidt 2008). These are people who were born after 1995 and live with computer, internet and mobile connection from their birth. They are used to satisfy their information needs very fast via the Internet technologies. The main problem for them is to form the information request correctly. From one side, for contemporary student the key questions for learning become the questions about the necessary information and the ways for obtaining it. From the other side, for the contemporary teacher the main education goal become teaching the skills of a new information synthesis, its analysis and verification, skills of independent learning. According to some statistics in 1997 an employee could keep in mind 15-20% of necessary knowledge for professional effectiveness, in 2008 the percentage was only 8-10% and the scientists underline the tendency to reducing the percentage (Kelly 2006). This tendency is obviously related to permanent renewing of operative knowledge; there are situations when recent alumni start working with already outdated professional information.

Hereby, the described factors promote the appearing of new educational phenomena like «Personal Learning Environment» and «Educational Social Network» which demonstrate the new ways of effective learning. Meanwhile contemporary pedagogical vocabulary added the new term "Education 2.0" which illustrates the tendency of education to transition from formal style to informal and blended style of teaching based on using plenty of information channels and network interaction.

The present paper is based on the idea that using the conception of Personal learning environment (PLE) is effective for planning and organizing professional education process by a university/college teacher. Moreover, highlighting the PLE key tools and services similar in different countries provides opportunities to plan and implement international education projects more effectively.

The international projects which are widely organized in universities of the authors of this paper identified the necessity of designing special multilingual and cross-cultural environment to support the students' project activity. The main idea of our research is concentrated on the using of Personal Learning Environment (PLE) conception as a basis of creation such a special cross-cultural environment for the students who participate in the international projects. As we unite the students from different countries we underline the importance of comparative study on understanding the essence of PLE.

The study of the research questions was conducted during the international grant project "Comparative analysis on the features of designing and using Personal Learning Environment (PLE) by students in Slovakian and Russian Universities" in 2013-2014 years under support of SAIA organization, ID 7356, National scholarship for researchers and teachers. Chair: Dr. associate professor Georgiy Gerkushenko. It was also supported by the grant project "Designing of an informational and analytical Internet portal for scaffolding and

development of university and kindergarten professional learning communities" by Russian Humanitarian Science Foundation in 2014, ID 14-06-12004, Chair: Dr. associate professor Svetlana Gerkushenko.

2. Theoretical Studies on Personal Learning Environments

Over the past two decades the perception of the Internet function has been changed. Initially many users considered the Internet as a technical tool together with electronic manuals, but nowadays there is a new understanding of the Internet as a learning environment with huge potential opportunities. We can find confirmation of this statement in the research of informal learning phenomena made by Cross (2007) where he underlines that contemporary specialists obtain professional knowledge mainly from informal sources (80-85%).

Increasing the role of self-study in the society is reflected in the official documents like Memorandum on lifelong learning (2000) where it definitely states three types of contemporary learning process: formal learning which leads to a degree or certificate; non-formal learning, occurring in an institutional context but does not result in formal grades or degrees; and informal learning which is individual, not structured and in most cases happens unintentionally.

In a number of studies the leading role of informal learning for professional development is discussed. For example Klamma (2007) notes "Once you step beyond traditional institutional boundaries you can find learning, which is driven by and for, 'you, the learner'", at the same time Cross (2007) stresses that at work people learn more in the break room than in the classroom, discovering their jobs through informal learning, observing others, asking the person in the next cubicle, calling the help desk, trial-and-error and simply working with 'people in the know'.

Thereby, the non-formal and informal learning become more and more widespread in the world of education which causes the appeal to innovative learning approaches and new learning tools. Thus, for example, the developmental theory of connectivism is getting more and more popular in the light of new ways of learning.

Connectivism as a productive approach for e-learning was introduced in 2005 by two publications, "Connectivism: Learning as Network Creation" by Siemens and "An Introduction to Connective Knowledge" by Downes. The appropriateness of connectivism as a learning theory for the digital age is argued by Downes who underlines that "connectivism is the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks. … there is no real concept of transferring knowledge, making knowledge, or building knowledge. Rather, the activities we undertake when we conduct practices in order to learn are more like growing or developing ourselves and our society in certain (connected)" (Downes 2012).

Principles of learning in the theory of connectivism were defined by George Siemens *(2005)*:

- Learning and knowledge rests in diversity of opinions.

- Learning is a process of connecting specialized nodes or information sources.

- Learning may reside in non-human appliances.

- Capacity to know more is more critical than what is currently known.

- Nurturing and maintaining connections is needed to facilitate continual learning.

- Ability to see connections between fields, ideas, and concepts is a core skill.

- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.

- Decision-making itself is a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

These principles show the developmental way of learning, the way where a learner is active, motivated and self-directed. That is the reason why connectivism can be partly associated with Vygotsky's 'zone of proximal development' (ZPD) where the learning process is productive if it is organized in communication and joint activity and is based on assimilation of social experience. But one of the main distinctive features of connectivism as an innovative approach in education lies in the emphasis that it gives to technology's effect on people's life, communication and learning.

The implementing of technical tools changes the education process dramatically, so the new tools are needed to be analyzed from the positions of their potential opportunities for learning.

First of all, "Learning Management Systems" (LMS) or "Learning Content Management Systems" (LCMS) as the most well-known tools should be mentioned. I notice that they are mainly oriented to support the "traditional education" or formal education and very often are characterized as inflexible in spite of a number of their undeniable advantages. Sie (2013) notes that the learning process in LMS is usually uniform and the learning path is directed in the instructor's way. In order to achieve the goal, the learner must pass through all topics in a given order. Usually, the materials inside of LMS are locked and available only during the course and only to the learners registered for a specific course. These statements confirm the lack of content and context flexibility for learning with LMS, lack of learning individualization.

Recognizing the failures of traditional LMS, discovering of the new ways to support the lifelong, informal, personalized, and networked learning has become very topical research problem. The innovative education using information technologies should mirror the characteristics of contemporary learning which is mostly personal, social, flexible and dynamic.

According to the researchers of web tools for education (Richardson 2010; Vossen&Hagemann 2010) today many resources that can be used in the learning process are available on the Web as Web applications. For example, the learner uses the knowledge of a community and at the same time contributes with his/her own knowledge using such tools as weblogs and wiki systems. The most important is that created materials will be available to the learner as long as necessary and when it is necessary.

In 1998 Downes supposed the PAD (Personal Access Device) would become the dominant tool for online education. He noted that education would become truly personal, and it would become truly portable. It will be personal, because the PAD serves as an individual student's primary educational tool, and it will be portable, because PADs are really portable. Nowadays we can see the truthfulness of those statements. A big number of electronic tools and web services, created for education, promote studies to determine a special environment that will aggregate different Web resources and thus make them more efficient in use. Obviously, such an environment should be very simple for maintenance and administration, that all learners can use it without specific technical knowledge. That kind of environment is named Personal Learning Environment (PLE).

Historically the beginnings of PLE lie in the early years of the 21st century, inspired by the work of Oleg Liber, Dave Tosh, Scott Wilson, Graham Attwell and Stephen Downes. The analysis of studies on the PLE content and value for education goals (G. Attwall, S. Wilson, A. Cann, M. Harmelen, L. Blackall, M. Amine Chatti, S. Downes, J. Herget, I. Mader, T. Anderson, R. Lubensky, S.Alferov, A. Andreev, V.Kortov, and others) gives us opportunities to find a number of PLE definitions.

According to Downes (2007) a PLE is "indeed not a software application per se, but is rather a characterisation of an approach to e-learning". Graham Attwell & Cristina Costa (2008) note that Personal Learning Environments offer both the framework and the technologies to integrate personal learning and working. Ron Lubensky (2006) in his research "The present and future of Personal Learning Environments" details a Personal Learning Environment as a facility for an individual to access, aggregate, configure and manipulate digital artefacts of their ongoing learning experiences.   Siemens (2007) argues that PLEs are a concept-entity and consist of a collection of tools, brought together under the conceptual notion of openness, interoperability, and learner control. Anderson (2007) states that a PLE is a web interface into the owners' digital environment. Wilson (2008) on the other hand marks that PLE is not just a piece of software. It is an environment where people and tools and communities and resources interact in a very loose way. In our research we will use the definition made by a group of experts as a base. This definition implies that PLE is a collection of different ICT tools and software, usually social software, to foster self-regulated and collaborative learning (Valtonen et al. 2012). This understanding of PLE allows us to conclude that PLE can be considered in relation to both types of learning (formal and informal), so the PLE can be used to create formal and informal learning environments.

Analyzing the contemporary literature on PLEs we conclude that there are two different conceptions of the term "personal learning environment". The first group of researchers writes about "(personal) learning environments". They understand PLE as a mean of (re-)instrumentation of teaching and studying activity for

the goals of personalization, selection, adaptation etc. (Godwin-Jones 2009; Taraghi, Ebner et al. 2009; Žubrinić&Kalpić 2008). The second conceptualization of the term concerns the exploring of "(personal learning) environments", or "environments for/of personal learning". Those researchers are concerned with individuals gaining control over their (intentional) learning activities and their instrumentation (Attwell 2007; Downes 2007; Johnson & Liber 2008).

Thus, in the variety of researching there is a number of diverging understanding of PLE which allows to state that the PLE's concepts are still not clearly identified. There are a lot of terms and acronyms which signify different PLEs, such as "aPLE" (adaptable PLE), "mPLE" (mobile PLEs), "iPLEs" (institutional PLEs), "PWLE" (Personal Work and Learning Environment), PRP" (Personal Research Portal).

One of the most important research questions is creation of functionality and constructing of a learner's PLE. The simplest but not enough efficient way of creating PLE is when some tools which a learner use can be on the Web, and the others can be desktop applications. The other way of creating PLE is using only Web applications in the Web browser environment. The choice of the ways depends on a learner's level of comfort. The constructive features of a PLE can be supported by existing client applications and social software such as e-mail client, word processor (editor), video editor for multimedia presentations, webblog client, personal webblog, photo editor, webbrowser, service for podcasts, news reader, FTP client for multimedia files exchanging, etc.

The question of the ways of PLEs integration into existing learning environments is still controversially debated. For example, Downes recommends a replacement of traditional learning platforms by PLEs, on the other hand Attwell suggests that PLEs could help informal learning to be individually organized offering the possibilities outside formal settings (Attwell 2007). The latter attempts to enable students to choose between formal and informal environments without being forced to continuously adapt to new instruments and services (Fiedler 2007). Considering the environment that provides full resources integration putting it in the learning context we refer to a special mashup PLE application. Mashup is a relatively new concept of Web applications that combine data from more than one source. According to e-learning experts (Van Harmelen 2006, Žubrinić&Kalpić 2008, Chatti 2010) this concept can be efficiently applied in creation of a PLE appropriate for education goals. There are two types of mashups: mashups by aggregation which do not require advanced programming skills and are often a matter of cutting and pasting from one site to another; and mashups by integration that integrate different application programming interfaces (APIs) in order to combine data from different sources and accordingly need programming expertise.

Considering the components of PLE, there is no doubt that they depend on learning goals, learner's personality and the individual way of learning. So, the goal of PLE's designing and development is determined more by a learner's motivation than external standards.

3. The empirical study on PLEs of Russian and Slovakian students

3.1 Methods

The research was carried out in Russian Federation (Volgograd and Moscow) and the Slovak Republic (Trnava) over a two-year period 2013-2014 and involved 175 Russian and 85 Slovakian students and teachers who used computer software in education process. The research was conducted in several universities of both countries. In Russian Federation we studied the students from Moscow State Institute of Physics and Technology and Volgograd State Technical University. Slovakian students who answered the questionnaire were from Trnava University and University of Ss. Cyril and Methodius.

The methods of our empirical study consisted of students' questionnaire analysis, and narrative interviews. The questionnaire consisted of 70 questions and aimed to research:

- The students' academic level
- The students' social and economic status
- Internet services in use
- The level of communication in students' group
- The universities' resources in use

To know about academic level of students we asked them about their average mark at university, level of the English language, students also marked whether they participate in publishing activity; take part in any research projects and whether they have other post-secondary education.

3.1.1 For analyzing the social and economic status of Russian and Slovakian students we asked questions about their employment status: the job, its accordance to the current study, the level of monthly salary. Students also marked their housing conditions and marital status.

The group of questions for analyzing internet services that students use for studying included such points as: Which computer devices do you have in personal use? Which mobile phone do you have in personal use? How old is your computer? What is the speed of internet connection? How much time do you spend at the computer every day? What are the most useful internet resources for your study, etc. For this goal we also used method of students' interview when students described the role of the Internet services in their study.

The university resources useful for the students could be found out through the questions like "How often and in which way do you use your college/university Internet resources? Which additional resources would you like to have?"

Designing the questionnaire we used combination of open and closed types of questions, so students could have chosen the variant of answer or could have written their own answer. The most convenient thing was that the students could fill in the questionnaire form at home or at the university as they did on special web page that we designed for this goal.

According to the students' answers we could make the structure of the participants which is shown in the Table 1.

Country	Study type		Year of study (%)				Sex (%)		Age (%)		Level of English		
	Full time	Part time	1	2	3	4	M	F	≥ 20	≤20	L	M	H
Russia	50	50	12	30	16	42	78,8	21,2	19	81	65	34	1
Slovakia	100	-	58	28	7	7	73	27	29	71	20	65	1 5

Table 1. The participants of the comparative study

3.2 The Comparative Analysis of Students PLE

As we mentioned above, a PLE is a learner's gate to knowledge. To make an in-depth analysis of the essence of a contemporary student's PLE we took several academic groups from Russian and Slovakian universities. The students, whose PLE we studied, could be divided into two big groups:

- Full time students younger than 20 years old;
- Part time students older than 20 years old.

Technical equipment evaluation: Students' technical equipment evaluation included 5 questions which concerned the types of computer devices and mobile phones in personal use, internet access.
The result shows that:

- 100% of students in both countries use different computer devices for learning;
A. Computer/laptop – 98%
B. Tablet PC – 56%
C. Scanner – 15%
D. Printer – 76%
E. Photo-Video Camera – 68%
- 73% of students use smartphone (Apple, Android, Windows Phone) with permanent internet access;
- The devices of students are quite new;
    A. Less than 1 year – 15%

B. 1-3 years old – 68%
C. More than 3 years – 17%
- The daily internet access is stable. Students prefer unlimited internet with the speed 5-30 Mb/s.

3.2.1 Evaluation of students' Internet services using for study: This evaluation included the group of 12 questions with the choice of a variant/s and an interview with students about the role of Internet services in their study. Students' answers are shown in the table 2.

Questions	Russian students	Slovakian students
How much time do you spend at the computer every day?	Less than 1 hour – 5% 1-3 hours – 15% 3-5 hours – 38% More than 5hours – 42%	Less than 1 hour – 10% 1-3 hours – 28% 3-5 hours – 32% More than 5hours -30%
How many e-mail messages do you get daily?	0-10 – 70% 10-100 – 30% More than 100 – 0%	0-10 – 86% 10-100 – 11% More than 100 – 3%
Do you have your own site or blog?	Yes – 23% No – 77%	Yes – 25% No - 75%
Do you use social networks for your study? What for?	Yes – 98% No – 2% For: Communication with classmates – 35% Communication with teachers – 23% Discussion of joint projects with classmates – 22% Searching information for my study – 20%	Yes – 99% No – 1% For: Communication with classmates – 46% Discussion of joint projects with classmates – 27% Communication with teachers – 12% Searching information for my study – 15%
Choose 5 important and mostly used Internet services that you use for study	Search engines -40% Knowledge bases -26% Electronic libraries and catalogues -7% E-mail-15% Social networks and professional communities -12%	Search engines -39% Knowledge bases -33% Electronic libraries and catalogues -6% E-mail -11% Social networks and professional communities -11%
What kind of Internet services do you use for editing documents and presentations?	Google Drive -19% Google Apps -15% Microsoft Office Live -9% Don't use - 57%	Google Drive – 16% Google Apps – 16% Microsoft Office Live -28% Don't use– 40%
What service do you use for blogging	Livejournal -13% Own site-blog -19% Don't use – 68%	Own site-blog -8% Don't use -92%
What service do you use for blogging	Livejournal -13% Own site-blog -19% Don't use – 68%	Own site-blog -8% Don't use -92%
What service (site) do you use for video channel	YouTube – 24% Don't use – 76%	YouTube – 45% Don't use – 55%
What service do you use for presenting your photo	Flickr – 12% SkyDrive -10% Don't use -78%	Flickr – 6% Photobucket – 6% Don't use -88%
Do you use content aggregation technologies and personal portals(RSS, Atom, igHome, Netvibes etc.)	Yes – 4% No – 96%	Yes -3% No – 97%
Do you use learning materials from e-learning systems in English?	Yes -6% No – 94%	Yes -19% No – 81%
Do you use learning materials from e-learning systems of your country?	Yes – 44% No – 56%	Yes – 28% No – 72%

Table 2. Internet services used by students

According to the results which are reflected in the table 2 we can conclude the following:
- Students from both countries have the same access to the Internet services, and almost the same conditions of using it.

- In both countries we received the same results about using social networks for students' study. Almost all students use network communities for learning. The little difference was in the goals for such communication. Russian students pay more attention to the communication with teachers through the networks. Meanwhile, Slovakian students spend more time there communicating with classmates. The results can be explained by the facts that in the group of Russian students who participated in the research there are part-time students who spend more time in distant communication with a teacher, so the network is a very convenient way for them to contact a teacher for discussing some tasks.
- Slovakian students use much more university/college internet resources.
- More Slovakian students prefer to use the Internet services for editing learning documents and presentations, meanwhile more Russian students use blogging opportunities.
- Slovakian students use e-learning materials in English more than Russians, but they use native materials much less. We suppose this fact can be explained by two factors. The first one is that Slovakia is a member of the European Union and students are more oriented to be integrated in European learning community where the most useful language is English. Meanwhile Russian students are less skillful in English and less motivated to use such services as they are not very useful for them. The second fact is that in Russian e-learning system a lot of learning materials which are proved by the Ministry of education and are widely used by Russian teachers and students are created.
- Significant percentage of students in both countries doesn't use at all tools as blog, video-channel, photo, podcast, content aggregation technologies, e-learning systems.

Hereby, we can conclude that PLEs of the students in observing universities are quite "poor" and limited by several tools and services. That fact initiated the search of the reasons or factors influenced on students' PLEs.

4. Conclusion

The research showed the differences in understanding of PLE components depending on ICT landscape in different countries. That fact determines the necessity of study such research questions as:

1. What factors determine the software tools and Internet services included in PLE: country, age, economic and social status of a learner, etc.?
2. How does PLE influence the students' communicative actions to their classmates during education process: no cooperation, low level of cooperation, middle level of cooperation, high level of cooperation?

According to the results of the comparative analysis of students' answers we conclude that students' age in our research was not really general factor that influenced the choice of digital tools and the Internet services. Here we need to mark that the eldest students who participated the research were 27 years old and the youngest ones were 17 years old, so we could not compare the big age difference. The economic status of learners was also not a powerful factor which could determine students' PLEs. The reason is in wide availability of devices which provide the Internet access and enough speed for learning goals. More than a half of students obtain smartphones and tablet PCs additionally to laptops which promote the mobility of satisfying the students' learning requests. The most important factor which influenced the content of students' PLEs was their academic level and social status. Students who already have professional experience are more motivated in using various Internet resources and services for their work and study. The students whose professional activity was related to their study achieved the highest scores. Such students have their own web-sites where they lead blogs, use video channels for presenting their skills and for communicating with experts, participate in professional forums. The students with high academic level are more concentrated on using learning materials from different e-learning resources, use search engines and knowledge bases, are very active in using the tools for editing the presentations.

Country can be the factor influencing the students' PLEs. First of all, it depends on the activity of a country in programs of students' academic mobility. In this case students have many opportunities to learn about different services and what is more important they can use them in cross-cultural and multilingual communication with other students and teachers. This is the factor that motivates students to be curios in trying different tools to participate the international or other type of communication. But also the important factor is the development of native learning services of a country, which can be the basement of students'

active position in using university services and national e-learning systems to achieve better results in learning activity and obtain professional competences in real situations. The second research question concerned the link between students' PLEs and their cooperation with classmates. The research shows the strong connection between the necessities of cooperation work and the using of a PLE content. Almost all students use social networks for their communication with classmates about learning tasks. According to our observation, the level of students' cooperation is medium if a teacher does not concentrate the subject tasks on cooperative projects. Students exchange the materials and discuss the home work tasks preferably on the Facebook. In case a teacher motivates students to make some research or other type of projects in small groups, the level of cooperation becomes high, students become more active in using different internet services and tools, they make the web-page of a project and work cooperatively dividing the responsibility of a project stages between each other. Students put pictures/photos, some information related to the project goal, make collages and even start to lead a blog even if they have not done it before.

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Social Media's can Help Universities with Job Placements

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Abstract. The process of interaction between individuals, through the use of social media, is one of the most complex problems that theorists have had to analyse in recent years. Social media tools are becoming an important presence in recruitment processes, transforming them. The rapid changes that the diffusion of social media has had in the communication processes would undoubtedly impose a drastic change: the use of social media allow an instant sharing of ideas, opinions, knowledge and experiences, creating a new "space-time" dimension that could be translated in a new way (additional) to "recruit" workers. The paper aims at providing an analysis of the phenomenon of social recruitment in Italian universities through the analysis of the percentage of presence and survival of these social networks and the use of this instrument for the placement of graduates in companies.This study can be useful for managers of universities and firms to understand whether the presence of Universities on social media by students and firms is positive or not. The challenge is necessary and it must be not only organizational but, above all, cultural.

Keywords: social media, social recruitment, job placement, social recruitment in universities.

1. Introduction

Universities, today, are facing an extremely dynamic and complex environment, which requires the adoption of strategies aimed at continuous change. In order to be "competitive", they need to evaluate and highlight new variables that allow them to respond to the social and cultural evolution. Today, the candidates that are to be placed on the market have a "digital identity", they spend their free time online on the social networks, they have energy, enthusiasm and know-how, they speak a computer language, they love virtual interaction. In this scenario, the University's main goal, apart from training, becomes that of encouraging its graduates to enter the job market, guaranteeing their placement also with the support of innovative communication tools. In these years, the enterprises are progressively changing their recruitment processes abandoning more and more the traditional forms in favor of new processes that guarantee a quality workers profile that measure up to the challenges dictated by globalization and technology.

As consequence, to compete in the "war of talents", Universities have to develop governance behavior and policies influenced by the ICT and its evolutions.

From the publications of Bartram (2000) and Galanaki (2002), on the use of the Internet in the recruitment process, research has grown considerably. "E-recruitment has been, substantially, influenced by social media" (Schramm, 2007, Kaplan and Haenlein, 2010), which allow companies to look for not only the *"active candidates"* (Furness, 2008; Doherty 2010) but also *"passive candidates"* (Williams and Verhoeven, 2008; Jackson, 2010), through the construction of a relationship based on mutual interest and understanding. (Davison, Maraist and Bing, 2011). The use of social media also allows potential candidates to get to know the brand of the company (Schramm 2007; Dickson and Hollet, 2010) which can show "the human aspect of society" and "an idea about daily activities" (Richards, 2007, Madia, 2010). In this way the job seeker can choose an appropriate employer (Peluchette and Karl, 2010).

Enterprises require from Universities quality candidatures. Therefore, in order to be competitive, Universities, in general, and Career Services, in particular, need to invest in more efficient communication processes, allowing, as a consequence, the internal actors (post-graduates, graduates, students) and the external ones (enterprises) to obtain prompt information. Students, today, place a lot of importance on on-line job search, notification of job posting and communication through elettronic means.Therefore the choice of a specific type of communication has, however, obvious social implications as, the more the entrepreneurial relationship is based on formality, the more important it will be for the enterprise to speed up the message and thus obtain a quick response. In this global and national picture, the Universities have to face a great challenge, which is not only economical but mainly cultural where social media become the tool for an innovative communication which encourages connection between different cultures, departments and organizations at a distance without time limits, creating in this way new alternatives as opposed to the formal

traditions linked to time and space. (Peluchette and Karl, 2010). Communication that aims at improving the "marketability" of its graduates.

Back in 2001, Davidson showed that the use of the web for career services was convenient. Students had many benefits: they could use it at any-time and in any-place, they knew that by using this instrument in private life, they could have direct access to information through the University Career Service front desk.

Although there are many benefits and promises from social media several risks are associated with their use. The ambiguity related to legal and ethical issues (for example individual privacy) of social media at the same time contains the enthusiasm related to the potentialities that social media offer.

The paper aims at providing an analysis of the phenomenon of social recruitment in Italian universities through the analysis of the percentage of presence and survival of these social networks and the use of this instrument for the placement of graduates in companies. The purpose of this study is to investigate the different underlying needs and preferences that drive students towards job search and to understand if University Career Services (referred to UCS) use the same instrument. Internet is a territory of millions of social media, such as blogs, social networking, forums, etc. with different subjects, for this reason we have selected only one field of research: Facebook.

This study can be useful for managers of universities and firms to understand that whether the presence of Universities on social media by students and firms is positive or not. The challenge is necessary and it must be not only organizational but, above all, cultural (Normann, 1996).

2. Facebook's use in Italian Universities Career Service: an opportunity or a risk?

The Job placement service in Italian athenaeums aim at facilitating the entrance of graduates into the working world. By promoting the possibility of getting a job in Italy and abroad, it renders student and graduate curricula vitae available with the specific aim of gearing them towards jobs. Today, young people between 22 and 35 years old are unemployed and very often, they do not look for a job because they know that they will not be able to find it: the rate of unemployment in Italy has almost reached 11,6% so the only solution for graduates is competing in a global market. For this reason, many athenaeums have decided to be present and active on social networks. The athenaeums, users of social media, allow their graduates to be more easily identified or introduced for recruitment to managers from enterprises found all over the world. The benefit that can be obtained from this communication and recruitment tool is way above its cost and it is superior to traditional methods. In fact, messages sent through social media, besides being more plausible have a relatively low transmission cost and possess increased applications. The time that enterprises spend in developing relationships that lead to the recruitment of successful candidates can also help in collecting reference information and improving selection. Thanks to the job placement office's simple registration as "fan" on the employer page of an enterprise, all students are signaled within the flow of the enterprise's activity and are visible to the friends on the web. Therefore, this mechanism encourages word of mouth and the diffusion of the contents published. However, so that the enterprises may choose their "talents", it is necessary for the candidate to recognize a position within the enterprise where he may grow professionally, where there is a good environment and good relationships, where he may be appreciated, where his talent may be expressed and where a good balance between work and lifestyle may be maintained. All the "employed" enterprise, owner of the web page has to do, is create quality contents able to entertain and create buzz marketing on the social web. There is a dual benefit: the "employed" enterprise will directly improve its visibility and image and there will be an effect on the sale of products. In fact, the methods, the tools and the approaches developed by using social networks for recruitment can be transferred directly to other entrepreneurial functions like marketing, customer services, product development, etc. the "employer" enterprise, that is, the Athenaeum, improves its visibility by using social networks and it significantly improves, on the one hand its perception and, on the other hand, the employment of the more qualified graduates. Thanks to the high visibility of social networks, a high number of qualified candidates can be published who, otherwise, would not have been able to be employed using other sources. Besides, if the high rate of utilities are to be considered as well as the quick answers from enterprises on online social communication channels, the key posts could be filled more quickly, resulting in a reduced number of unemployment of its graduates. Facebook, today, deeply penetrates users' everyday life and it becomes invisible once it is widely adopted, everywhere, and taken for granted (Luedtke, 2003), so that users do not see its risks. Smith and Kidder (2010)

explain how students in schools and universities do not realise that the information they are posting on their profiles and the pictures they are uploading of their experiences can, and are, being used by employers as a means of checking up on possible recruitments. Therefore, the main risks are related to privacy and changes in the relationship between public and private spheres, such as inadvertent disclosure of personal information, damaged reputation due to rumors and gossip, unwanted contact and harassment or stalking, use of personal data by third-parties, and hacking and identity theft (Boyd & Ellison, 2008).

3. Empirical Research: Objectives

The landscape of recruitment is changing. The use of social networks in the recruitment processes of firms allows the selection of active and passive candidates, increasing competition and reducing costs of recruitment. In this context also universities are facing intense efforts to adapt to the change, to become more prompt and efficient in achieving their placement goals. But this is really difficult.

Social media can contrast with the established norms and traditions of universities communication. Universities use structured and formal information flow, whereas social media uses informal and interactive conversations. Thus, many institutions are reluctant to choose social media platforms for communication and students' placement, and they don't exploit their potential. This paper intends, in the first part, to identify to what extent italian universities and UCS use social media. In the second part, it analyzes the perception of the use of Facebook in UCS by students and firms. In particular, it explores Facebook's perceived benefits by students and firms and if these are outweigh the observed risks.

Through an empirical study, we analize conducted on a sample of Italian students and firms we'll explore some items that will allow us to measure and compare what students and firms perceive as beneficial and what they perceive as a limit.

3.1 Methodology

We apply a method, based on difference measurement (Krantz et al., 1971; Roberts, 1979), for fitting of perceptual preferences of student on use of Facebook by UCS.

The Maximum Difference Scaling (MDS) was adopted for developing an unidimensional scale of benefit or drawback importance. It is a research method (Chrzan & Golovashkina, 2006), which analyzes both the best and the worst choice from a list containing multiple items.

A set of items to be investigated was selected and we have presented the sets one at a time to respondents. In each set, the group was asked to examine the most salient or important attribute (the best) as well as the least important (the worst). Ratings of each item were established on a five-point scale of Extremely Important, Very Important, Somewhat Important, Not Very Important, and Not at All Important.

The group was asked to select the pair with the largest perceptual difference (Maximum Difference). MDS requires an experimental approach where each item is shown a minimum of three times (Orme, 2005). To identify the appropiate items for the analisys, it was conducted a qualitative research study to understand:

- If students/firms use Facebook;
- If students/firms use UCS for placement/recruitment;
- If students/firm use Facebook for UCS;
- Is Facebook an important instruments of communication for placement in UCS?

To recruit focus group participants, we have contacted them in University classrooms and after via email. The same procedure was used for the full sample of students.

The firms were invited to participate via email.

The Mds web based instrument was then developed and tested, some modifications were made, the final survey was posted on the "Salento University" web site.

4. Research Results

4.1 Search Sample Surveys

Building up the sample surveys of this study has been somewhat laborious. The first part of the research has been developed directly on the Internet, monitoring the UCS activity on Facebook of Italian Universities. In order to facilitate the accurate and consistent acquisition of information, two steps have been followed:

- Identifying Italian athenaeums which have an institutional profile on Facebook;

- Identifying Career services which were active, by analyzing the number of messages posted in a day and in a month, supplying the interaction and the passage of information between students and enterprises.

An analysis of Italian Universities has been started off and distinguished amongst:
1. State universities;
2. Non-state universities but promoted by public authorities (regions, provinces, municipalities);
3. University higher education and higher training doctorate institutions that, officially, do not possess degree courses but only doctorates and/or masters;
4. Non – state universities but recognized by the Ministry of education, by the University and Research.

Starting off from the panel of the University monitored by M.I.U.R. an WIKIPEDIA, a dataset has been created that comprises all Italian Universities, distinguishing them according to their geographic area, the presence of an institutional website and whether they are present or not on social networks. The sample survey has been subdivided into twenty geographical areas that correspond to the number of italian regions. We have indicate with "letter R" each area and we have classed them with a number (from 1 to 20), following an alphabetical order (R1= Abbruzzo, R2=Basilicata, and so on). After having created the first database, a subsequent analysis took place to identify the presence and activity of single career services on Facebook (Figure n. 1).
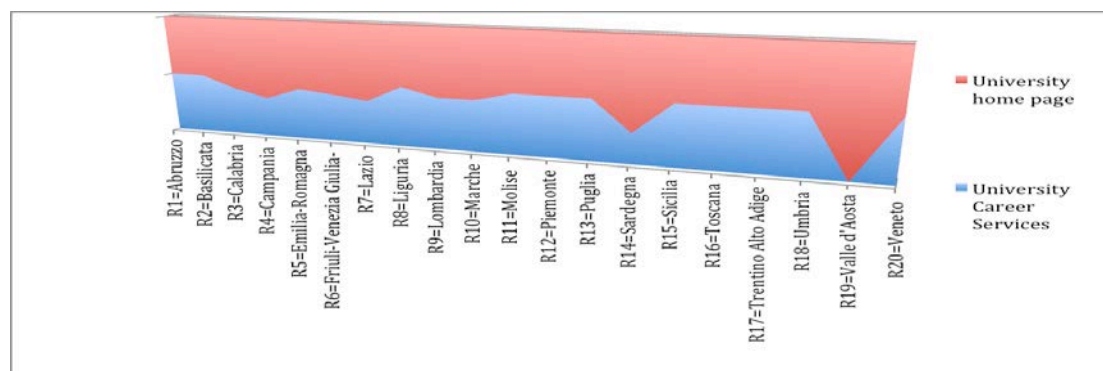
Figure 1 Comparison between the presence on Facebook of Italian Universities and University Career Services

The second part of the research was developed distributing a questionnaire among Italian students, directly in the Universities. The questionnaire was initially tested on a limited number of users, in order to understand at which point the questions were correct and the presentation form was accepted. Subsequently, the entire sample survey was posted on the Salento University website. For the firms the research was developed directly on the Internet.

Once a final database was created, sample surveys with questionnaires of this study were built up. In particular, 800 students and 50 enterprises were contacted. Students were divided equally as follows: from 21-22 years old; 22-23 years; 23-24 years old; over 24 years old while there were 65% of men and 35% of women. In the firms, the people responsible in the recruitment offices, were divided equally as follows: from 24-34 years old; 35-54 years old; over 55 years while there were 73% of men and 27% of women. There was a random choice of enterprises and students, so, about 80% of the enterprises do not use Facebook for recruitment and 25% do not have an official Facebook profile; while only 12% of the students contacted do not have a Facebook profile. Amongst the ones present on Facebook, many have daily contacts with Facebook. This percentage is high for the students and less for firms. In particular, 82% of students have daily contacts while only 53% of firms visit it daily. The remaining part of users visits the group few times a week.

A survey to analyze the use of the popular social network, Facebook for job placement was designed and distributed. The first question for students and firms has to be: "Does your University Career service have a Facebook page?" or "Does your firm have a Facebook page?". Respondents answering "yes" were directed to questions regarding the use of Facebook, promotion, user feedback and general comments on social networking. Respondents answering "no" or "I don't know" were directed to questions that investigated reasons for not being present on Facebook.

About 94% of students and 80% of firms saw the questionnaire and accepted to fill it in.

The sample at last was composed of N= 752 students and N= 40 firms, all equally distribuited among regions.

4.2 Analysis

To develop the MaxDiff method, we created ten sets of four attributes each. Across the sets, every possible pair of items appeared together exactly once. Each item appeared once in each of the four positions in a set (first, second, third, and fourth) and each item appeared exactly four times across the ten sets. When shown a set of four items, the respondents were asked to choose the items that were the most important and the least important benefits/ drawbacks when deciding to use Facebook of UCS. The order of the ten sets was fixed for all respondents.

▪   Which of these options would you MOST likely choose?

▪   Which of these options would you LEAST likely choose?

A hierachical Bayes was used to analyze data, from 0 (Not at All Important) to 100 (Extremely Important).

Figure 2 Perception of items by students (divided for Italian regions)

FACEBOOK USE IN UCS: Attributes	IMPORTANCE SCORE AMONG ITALIAN STUDENTS IN EACH REGIONS																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R 10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Support to recruitment process (notify of deadlines)	0.11	0.13	0.1	0.06	0.08	0.27	0.03	0.14	0.12	0.04	0.13	0.15	0.02	0.15	0.17	0.13	0.05	0.18	0.14	0.13
Improves quality of recruitment	0.05	0.01	0.02	0.01	0.02	0.03	0.01	0.02	0.06	0.03	0.04	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.01	0.02
Ensures consistency between job search and job	0.09	0.02	0.02	0.03	0.01	0.01	0.02	0.04	0.02	0.12	0.02	0.01	0.02	0.01	0.03	0.12	0.01	0.02	0.01	0.02
Improves reliability of firm/candidate	0.03	0.01	0.14	0.13	0.12	0.1	0.18	0.12	0.09	0.14	0.07	0.2	0.1	0.15	0.12	0.03	0.14	0.12	0.15	0.13
Removes human errors in recruitment process	0.02	0.04	0.1	0.2	0.1	0.02	0.03	0.01	0.14	0.01	0.06	0.05	0.06	0.02	0.04	0.05	0.06	0.12	0.04	0.03
Uses a simple language	0.19	0.28	0.17	0.15	0.16	0.15	0.2	0.24	0.14	0.23	0.17	0.16	0.23	0.18	0.21	0.20	0.19	0.11	0.1	0.15
Saves money	0.04	0.09	0.17	0.04	0.15	0.08	0.11	0.1	0.05	0.03	0.18	0.11	0.01	0.14	0.12	0.04	0.17	0.07	0.03	0.1
Saves time in research process	0.19	0.2	0.03	0.17	0.08	0.2	0.1	0.12	0.15	0.09	0.1	0.12	0.14	0.16	0.12	0.22	0.2	0.14	0.15	0.1
Improves diffusion of information (job opportunities)	0.25	0.21	0.17	0.17	0.23	0.26	0.25	0.16	0.13	0.23	0.21	0.15	0.25	0.12	0.14	0.12	0.12	0.24	0.21	0.2
Results in few days	0.03	0.1	0.08	0.04	0.05	0.06	0.07	0.05	0.1	0.08	0.02	0.04	0.05	0.06	0.03	0.05	0.03	0.08	0.06	0.12

Figure n. 2 shows that there is a substantial homogeneity in the answers regarding the geographical distribution of students. In particular, items such as "Uses a simple language", "Improves diffusion of information (job opportunities)" and "Support to recruitment process (notify of deadlines)" are extremely important, as well as "Saves time in research process", while "Improves quality of recruitment" and "Results in few days" are Not at All Important.

Also, for firms (Figure n.3) there is a substantial homogeneity regarding the geographical distribution. In particular, items such as "Uses a simple language", "Improves diffusion of information (job opportunities)" are extremely important, as well as "Saves time in research process" , but there is a trend reversal for items "Saves money" and "Support to recruitment process (notify of deadlines)". Firms focus on money and not on deadlines.

Figure 3 Perception of items by firms (divided for Italian regions)

FACEBOOK USE IN UCS: Attributes	IMPORTANCE SCORE AMONG ITALIAN FIRMS IN EACH REGIONS																			
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R 10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
Support to recruitment process (notify of deadlines)	0.05	0.02	0.1	0.06	0.08	0.07	0.03	0.04	0.02	0.04	0.03	0.05	0.02	0.05	0.07	0.03	0.05	0.08	0.04	0.03
Improves quality of recruitment	0.07	0.03	0.02	0.01	0.02	0.03	0.01	0.02	0.01	0.03	0.04	0.01	0.01	0.01	0.02	0.04	0.03	0.02	0.01	0.02
Ensures consistency between job search and job	0.05	0.02	0.02	0.03	0.01	0.01	0.02	0.04	0.02	0.012	0.02	0.01	0.02	0.01	0.03	0.02	0.01	0.02	0.01	0.02
Improves reliability of firm/candidate	0.12	0.1	0.14	0.13	0.12	0.1	0.18	0.12	0.19	0.14	0.17	0.2	0.1	0.15	0.12	0.13	0.14	0.12	0.15	0.13
Removes human errors in recruitment process	0.03	0.02	0.1	0.13	0.1	0.02	0.03	0.01	0.04	0.01	0.06	0.05	0.06	0.02	0.04	0.05	0.06	0.02	0.03	0.03
Uses a simple language	0.22	0.19	0.17	0.15	0.16	0.15	0.2	0.21	0.14	0.23	0.17	0.16	0.23	0.18	0.17	0.20	0.14	0.11	0.11	0.2
Saves money	0.14	0.12	0.13	0.11	0.16	0.2	0.19	0.13	0.14	0.12	0.11	0.13	0.14	0.24	0.16	0.15	0.17	0.17	0.17	0.13
Saves time in research process	0.15	0.2	0.03	0.17	0.08	0.2	0.1	0.22	0.15	0.16	0.1	0.19	0.14	0.16	0.22	0.2	0.2	0.14	0.21	0.22
Improves diffusion of information (job opportunities)	0.15	0.2	0.17	0.17	0.23	0.16	0.25	0.16	0.23	0.23	0.21	0.15	0.23	0.12	0.14	0.13	0.12	0.24	0.21	0.2
Results in few days	0.02	0.1	0.08	0.04	0.04	0.06	0.01	0.05	0.1	0.08	0.02	0.04	0.05	0.06	0.03	0.05	0.03	0.08	0.06	0.02

Examing the results of students and firms, we focused on the four best items and we have divided Regions in segments considering a similar score. We have divided the score in four segments. In segment 1, we have included Regions with *the best score (more than 0.17)*; *segment 2 includes* Regions with a score between 0.11 and 0.13 ; *segment 3 includes Regions with a score between 0.14 and 0.16; and segment 4 includes Regions with* the lowest score (until 0.10)*.

Figure 4 Perception of students

FACEBOOK USE IN UCS: perception of students divided in geographical areas	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4
Support to recruitment process (notify of deadlines)	R6-R15-R18	R14-R12-R8	R1-R2-R3-R9-R11-R16-R19-R20	R4-R5-R7-R10-R13-R17
Uses a simple language	R1-R2-R3-R4-R5-R6-R7-R10-R11-R13-R18-R19-R20	R8-R9-R12-R15	R14-R16-R17	
Saves time in research process	R1-R2-R4-R6-R16-R17	R9-R13-R14-R15-R18-R19	R7-R8-R12-R20	R3-R5-R10-R11
Improves diffusion of information (job opportunities)	R1-R2-R3-R4-R5-R6-R7-R10-R11-R13-R18-R19-R20	R8-R12-R15	R9-R14-R16-R17	

Figure 5 Perception of firms

We have classified students and firms in a specific

FACEBOOK USE IN UCS: perception of firms divided in geographical areas	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4
Save Money	R6-R7-R14-R17-R18-R19	R1-R5-R13-R15-R16	R2-R3-R4-R8-R9-R10-R11-R12-R20	
Uses a simple language	R1-R2-R3-R7-R8-R10-R11-R12-R13-R14-R15-R16-R20	R4-R5-R6-R9-R17	R18-R19	
Saves time in research process	R2-R6-R8-R12-R15-R16-R17-R19-R20	R1-R4-R9-R10-R13-R14-R18		R3-R5-R7-R11
Improves diffusion of information (job opportunities)	R2-R3-R4-R5-R7-R9-R10-R11-R13-R18-R19-R20	R1-R6-R8-R12-R15-R16	R14-R17	

segment only if they were present in that segment at least three times. A slight difference can be noted in the answers among students and firms belonging to the geographical areas. From the analysis (Figure n.4) it appears that for students of Basilicata, Fruili Venezia Giulia, Umbria, Calabria, Campania, the four items analyzed are very important. For the firms (Figure n.5), there are three regions, that is Basilicata, Lazio and Veneto that perceive all analyzed items as very important. For the other regions UCS used on Facebook is important but their perception of single items is different.

Once we have this information we built a table that compare the perception of respondents with the presence of the italian UCS (divided in geographical areas) on Facebook (Figure n.1). This analysis puts in evidence that there is a total corrispondence of data only for Basilicata, and a partial corrispondence for Umbria and Veneto.

Table 1. Comparison of results

	The Number of Official Page of Universities on Facebook is the same of the Number of official UCS pages on Facebook	*Perception of Students divided in geographical areas*	*Perception of Firms divided in geographical areas*
Regions	Abbruzzo, **Basilicata**, Liguria, Molise, Piemonte, Puglia, Sicilia, Toscana, Trentino Alto Adige, **Umbria**, **Veneto**	**Basilicata**, Calabria, Campania, Friuli Venezia Giulia, **Umbria**	**Basilicata**, Lazio, **Veneto**

Thus, crossing the data of our analysis we have divided Regions based on the relationship among: the number of Official Page of Universities on Facebook; the number of UCS page of Universities on Facebook, the Perception of Facebook's use in UCS by students, and the Perception of Facebook's use in UCS by firms.

We have classified Regions in:

Figure 6. Typologies of Italian Regions

1. *Hyper awake Regions*. There is a perfect corrispondence;
2. *Awake Regions*. They have a partial corrispondence;
3. *Sleep-Wake Regions*. They haven't a corrispondence.

It shows that the most active Region is Basilicata. This result, although it is true, is partially deviant. Analyzing this data must be taken into consideration the fact that in Basilicata there is only one Statal university, so it is easy for University to have an Official Page and a UCS Page on Facebook. On the contrary, it is usefull to note that there is a positive perception of the Facebook'use by students and firms. Abruzzo and Umbria are awake, that is there is a partial corrispondence among the elements.   All the other Universities are Sleep- wake. These results have shown that the predisposition of students and firms to use social networks very often come up against the fears that the universities have to start to use social networks as systems of communication with official pages.

5. Reflections

The success of social media, in the last few years, requires universities to be present in places where people connect and share knowledge. The purpose of this study is to analyze the perception of the use of Facebook in italian UCS by students and firms and comparing it with the presence of italian UCS on Facebook. Research demostrates that there are many potential benefits both for students (Figure n. 2) and for firms (Figure n. 3) of the use of Facebook in Universities. Students can access information in few time and to the job opportunities with simple language, directly on their personal page. Firms can save money and time during research process, and they can have quality candidatures. In this scenariou Universities seem to be becoming aware of the benefits social media could offer but they are still rather sceptical about how Facebook can be used.

This paper puts in evidence the need to reaffirm and reshape "the closeness and distance" between Universities, students and firms. Universities can better meet the needs of students and firms, connecting students and firms in a transparent, communicative and fast way.

The universities, complex adaptive systems, are trasforming themselves in open and collaborative systems, capable of developing deep partnerships with students, their families and firms, improving thus the effectiveness and efficiency of job placement. To achieve this, it is necessary to create places, especially

virtual, where new "distinctive" knowledge is created, a knowledge that spreads through relational assets that are established between the human components. The communication process, therefore, takes a central role, both in the student-university relationships and in the firm-university relationships.

This work can be useful for managers of Universities to understand that the challenge is due and it must be not only organizational but, above all, cultural. In this context policy maker have an important roles. They have to ensure investment to guarantee the security of the information presented in social media, in order to teach the Universities the right ways to be present on social media. Only in these ways we can be sure that information is accurate, timely, relevant and useful for students and firms.

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Social Media Marketing – A Win-win Situation?

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Abstract: The use of social media for marketing has been increasingly popular recent years, but still there is a lack of research studies. In this article, social media marketing in six wellness companies in Sweden is focused using in-depth qualitative interviews as research method. The interviews are analysed according to the qualitative content analysis method. The evaluation model MOA-SM is used as a theoretical reference frame for the analysis of the consequences of social media marketing for the stakeholders. The analysis show that there is no simple win-win situation for the stakeholders. Instead management, marketers and customers could have different advantages, disadvantages as well as challenges using social media marketing. It is a challenge for management to organize work processes in a relevant way for social media marketing and to recruit staff with appropriate skills, as well as to ensure that their competences are developed in relevant ways. Social media could be integrated with other systems such as "the digital reception", which makes the work more efficient and understandable, and could lead to increased productivity. The benefits of social media marketing are however often unclear and formulating goals of social media marketing as well as monitoring and evaluating the goals, are challenges for management. The work situation for the employees working with social media marketing has changed fundamentally. The work has become more stressful and demanding as a consequence of social media marketing, but the work could also be more meaningful due to the informal contacts with the customers. New competences are needed. The customers who use social media marketing could receive a more informal relationship with the company, and their views and attitudes could indirectly affect the services of the organization. They could participate in contests and sometimes receive lower prices for the services. Customers not using social media, do not have the same advantages.

Keywords: social media marketing, wellness industry, evaluation study, MOA-SM model

1. Introduction

This article focuses on an evaluation study of social media marketing in six wellness companies. The study is part of the research project "Efficient learning for quality in the wellness industry" (2012 – 2013), financed by the research financier Knowledge Foundation of Sweden. Some aspects of the study have already been published (Grundén & Lagrosen 2013, Lagrosen & Grundén 2013). In this article the results are further analysed and discussed from the main stakeholders' perspectives. The aim of the article is to analyse and discuss whether social media marketing is a win-win situation or not? A theoretical framework for the analysis is the MOA model (Grundén, 2009) for evaluation studies, focussing the main stakeholders' perspectives. In this article the original MOA model is further developed in order to be relevant for the analysis of social media marketing.

Social media marketing is more and more established as an important tool for marketing activities business. Traditional marketing is based on one-to-many communication where the producer is the sender and the customer is the receiver (push communication). This traditional paradigm is more and more replaced by the pull communication paradigm based on one-to-one communication and informal relationship between the marketer and the buyer (Ström 2010). With the use of social media for pull communication, we generally mean the use of "web-services where you can converse, read and share information, establish contacts for example." (Carlsson, 2010, p. 10). Social media marketing is related to "word of mouth-marketing", which is the intentional marketing influencing consumer-to-consumer communications by professional marketing techniques. Word-of-mouth is originally defined as "informal communication among consumers about products and services" (Liu 2010), but has now become "on-line word-of-mouth" (Hennig-Thurau, Gwinner, Walsh & Gremler (2004). Some researchers have even argued that word-of-mouth is the most influencing aspects that affect the consumers before they make a purchase (Day 1971, Katz & Lazarsfeldt 1955).

In relation-based communication the roles of sender and receiver becomes more unclear, and the roles can merge. In traditional marketing, the receiver could not affect the message sent by the marketer, now the receiver participates in the communications he or she like, and can thus affect the interchanged messages. In this way the marketing process becomes more unpredictable, but it could also contribute to new quality aspects. The communication gives the marketers knowledge about the customers' preferences and values, and

the influence could be more subtle than before. The communication is more about building relationships than selling products. Trust is an important aspect of good relationships. The ethics and values that are expressed in the communication become important aspects of the quality of the relationship. The roles of the marketers and the buyers are thus fundamentally changing (Brown 2009). The character of the marketing profession is changing, and new competencies and behavioural patterns need to be developed. Previous research has also indicated that management often experience substantial uncertainty regarding the use of social media and use them in inconsistent ways (e.g. Burton & Soboleva, 2011; Lagrosen & Josefsson, 2011).

2. The MOA-SM model

The original MOA model was developed by the author and has been used in several evaluation studies (described in Grundén 2009). According to the model, ideas about co-ordination and control influence the choice, design and use of technology and organisation and imply many important decisions. Important aspects that could be affected due to different designs of technology and organisation such as work situations of the staff, work processes, and services provided to the clients.

In the MOA-SM model "communication" has been added to the aspects "Use of technology and organization", in order to make the model relevant also for analysis of the consequences of the use of social media communication. Different use of social media marketing can lead to different consequences for the stakeholders' employees, management and customers.
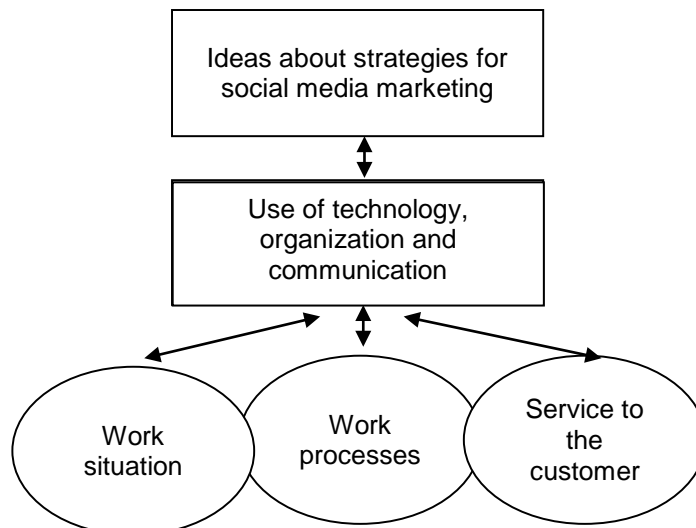
Figure 1. The MOA-SM model

Ideas about strategies for social media marketing affect the actual use of technology (such as social media), organization and communication (e g with clients). The actual use of technology, organization and communication affect the work situation of the employees (such as the marketers), the work process (as defined by management) and the communication with the clients via social media. Evaluation of the consequences of the use could also affect the actual use and ideas about strategies for social media.

There are complex interdependencies between work processes from a managerial perspective, work situations for the staff and the services provided to the clients, and there are no fixed limits between the perspectives, although the main inherent logics of the perspectives usually are different. An unsatisfying work situation for the personnel could negatively affect quality and efficiency aspects of the provided service. A satisfying work situation could have the opposite effect.

An evaluation study can focus on different parts of the model. In this study interviews are made with marketers in wellness organizations. Some of the marketers are also managers. There is thus a main focus on the perspectives of the employees and management in this study. The understanding of the clients perspectives are indirect, and based on the interviews of the marketers. Further studies could explore more of the clients' perspectives. The interview questions were related to the structure of the MOA-S model, and we

asked about the consequences for the different stakeholders of the design and use of organization, technology and social media marketing. The results, analysis and discussion were structured according to the perspectives of the stakeholders.

3. Research method

Six wellness companies were studied regarding their use and experience of social media marketing. Qualitative interviews were made with the marketers that were responsible for the social media marketing at each organization. The interviews were made during 2012 and the beginning of 2013. The interviews were tape-recorded and transcribed. Qualitative contents analysis was carried out on the data from the interviews, structured according to the stakeholder perspectives of the MOA-SM model.

Table 1: The Spa-hotels that participated in the study

Stenungsbaden Yacht Club	A spa-hotel on the west coast with a relaxed American east coast image
Ystads Saltsjöbad	The leading seaside spa-hotel on the south coast
Varbergs Kurort	A seaside spa-hotel on the west coast with a focus on traditional Swedish treatments
Hotel Tylösand	A seaside spa-hotel on the south-west coast with focus on art and music
Bokenäs Hav Spa	A spa-hotel on the west coast in a serene rural coastal setting
Hotel Skansen	A fashionable spa-hotel on the south-west coast in the famous tennis resort, Båstad

4. 4. Results and Analysis

This section is structured according to the stakeholders' perspectives in the MOA-SM model. The analysis of the management perspective focus on the consequences of the structure of the organization and work processes of social media marketing. The analysis of the perspective of the employees focus on consequences for their work situation of social media marketing. The perspective of the customers could only be indirectly analysed, as no interviews with customers were made, and focus on the consequences for the customers of social media marketing

4.1 The Management Perspective

4.1.1 The Organization of the Work with Social Media Marketing

The implementation of social media marketing in the organizations means the introduction of the pull communication paradigm based on one-to-one communication and informal relationship between the marketer and the buyer (Ström 2010). This offers a new potential of receiving a personal relationship with the customers, also when they are not visiting the hotels, but also new challenges in order to re-cruit employees that have relevant competencies for the social media communication. This requires management to identify staff with the appropriate skills, and to ensure that they also are able to develop their competencies in relevant ways. The staff is the core of the brand to an ever larger ex-tent", argues the respondent. Some of the organizations plan to recruit new employees for social media marketing. Employees that are trusted by the companies to write on social media often had reached 35 years of age. The most important thing is that the person who expresses himself through social media, do have social competence and a refined language, according to a respondent.

Policies for social media are quite usual in the participating organizations, and a way of control and co-ordinate the social marketing efforts among the staff. It is common to recommend that the guests should not be commented on social media, or that you should not write about the work place when you use social media for private use for example. Neither should you write negative aspects about your work. It is a challenge for

management to develop relevant policies in order to contribute to a relevant use of social media marketing among the staff.

It is common that the use of social media for marketing is started by a marketer who can be characterized as an "enthusiast" and had personal interest in social media. More employees are then usually integrated in the writing activities on social media. The use of social media for marketing in the studied organizations had often started by a marketer who can be characterized as an "enthusiast" and who had a personal interest in writing and using social media. One of the marketing manager stresses that it is important that many voices from the business are heard, and the goal is to involve even more members of staff in the use of social media activity Gradually, the use of social media spread in the companies. It can mean both advantages as disadvantages for the companies that development is initiated by an enthusiast. One advantage is that there is a commitment that is a driving force in the development and may seem motivating for the other operations. Enthusiasts build important expertise in the development of social media. One risk is being too dependent on individual persons' skills and interest, if the person leaves their job, for example. It is also a challenge for companies to integrate and organize the use of social media for marketing with more traditional marketing activities and the business plans.

4.1.2 The Digital Reception

An example of a high degree of integration and business orientation that could be further developed and contribute to increased productivity, was at one of the organizations that developed the concept of a "digital reception", where social media and other information technology systems were highly integrated. The same IT tools were used for all registration needed, for example, which made the work more efficient, and also understandable, both for the employees and the customers. This is expected to facilitate the work substantially. They try to imitate a reception in everything they do, and want to get the customer to check in digitally as soon as possible. A reward for this could be a better price on the reservation, for example. A part of the concept is to try to create a conscious segregation so that other guests who checked in the traditional way become aware of the advantages to check in digitally instead. It should also be easy to become a member, and have enough digital data, without filling in a paper document, according to the respondent. Twitter and Facebook are more and more expected to replace the traditional telephone communication.

4.1.3 Planning and Evaluation 0f Social Media Marketing

Customers communicate their experiences of their visits at the hotel and about their wishes and attitudes and get responses soon on social media used. You generally get a lot of tips from customers through their postings on social media: "The tips are worth gold. It can be anything from something they feel is missing from the breakfast buffet to the opening hours of the spa", a respondent stresses. You can see both trends of dissatisfaction and trends of joy on social media, more clearly compared with market surveys which are usually more concrete, a respondent continues. Such information could be valuable for the organization in order to adjust their services according to the needs of the customers. Committed customers are potential ambassadors for the company, spreading reputation through "word-of mouth". Such information from the customers was not however used very much by the organizations yes, but certainly has a potential for future more systematic use. A major weakness is that we know too little about the guests, one respondent stresses. Only when we know which guests that are often visiting us, is it possible for us to reward them in a relevant way. It would be good if you could focus most on these "ambassadors", the guests that visit the hotel on several occasions, a respondent claim.

Several respondents stress that it is more difficult to plan marketing efforts in social media compared to the planning of for example radio or television campaigns because there is so much happening in the field. Social media provide a great planning tool in the short term, while they are more difficult to use for long-term planning. It seems however, not to be common in the studied organizations to monitor the use of social media and analyse how much they contribute to the turnover. One respondent assumes that social media contributes to the turnover, but it is very difficult to define in measurable terms. Generally, there seems to be some uncertainty regarding how to monitor the use of social media in a meaningful way.

As the social media marketing is very time consuming, new costs for the organization are generated, and have to be met by increased in incomes related to the marketing activities in order to contribute to the return on investment. According to the results especially long-term planning and evaluation of the effects of social media

marketing is difficult for the studied companies. More and more methods for evaluation social media activities are however developed, such as Kelly (2013) with focus on measurement of return on investment of social media marketing, using tools as Google Analytics or Clicly e.g. containing various opportunities to produce statistics from operational use of social media. It is however not always easy to specify contributions to business sales in quantitative, measurable terms. Qualitative aspects such as commitment and attention of those who write on social media, both employees and customers, rather than focusing too much on the number of "likes" for example, may be needed. Probably there is a need to specify both quantitative and qualitative aspects for the evaluation of social media. New evaluation approaches and methods are needed in order to define "value" as well as follow-up values (Carlsson, 2009).

4.2 The Perspective of the Employees

4.2.1 Fundamental Changes of the Marketing Profession

The marketing profession is being fundamentally changed as a consequence of social media marketing, according to the results. As social media marketing is very time consuming, there is a risk that the work situation becomes more stressful, if not enough marketers are recruited when needed, or the task of writing is spread to other employees in the organization. The pace of work has increased drastically, according to the respondent: "It's full speed all day." Work is much more "24-7" compared to a few years ago", emphasizes one respondent: "Now you should have a constant dialogue". The respondent describes that on the one hand, the work with social media is demanding, but on the other hand it contributes to increased possibilities of direct contact with the guests. The new more informal ways of communicating with the customer could on the other hand, also contribute to a closer relationship, and to the meaningfulness of the job.

The time required for the social media activities varies widely among the hotels, from less than one hour per day, to a full-time employee. One respondent uses "spare time during work" for this work, but points out that he could put much more time on social media activities: "It could take more or less the whole of my working day, but that time I do not have". A disadvantage of the use of Facebook is that it "sucks up working," said the respondent. The respondent also writes on Facebook for work during holidays: "I'm never relaxed". The borders between private life and work life become blurred. Some of the interviewed marketers use part of their leisure time to write for the companies on social media and the writing on social media put more demands on private commitment compared to the earlier dominating one-way interaction.

4.2.2 New Competencies Needed

The work situation had changed a lot for the interviewed marketers, and there could be a need for competence development in order to meet the new demands. As more and more of employees in other departments are involved in social media marketing their work situations have also changed in similar ways to the marketers. It is common that different employees write in different social media depending on their interests and skills. The technical development in the field is fast, and you need to "keep up". The monitoring and analysis of use of social media often have to stand back for the time spent on actual usage.

Social media marketing creates new demands for the marketers to write and communicate on social media. New competences could be needed in order to write with "the right attitude and tone" on different types of social media. It is a matter of keeping the right personal tone, and not to write in a too "correct" manner, a respondent mentioned. One respondent stresses that you should write on social media in a way that is acceptable to all readers. One difficulty with social media is judging how privately you should write, one respondent stresses. The respondent emphasizes that the use of images is good on social media, because they express a lot of emotions and information. Images are widely used in communication via Facebook. You can always compare with your private use of social media if you think about different advantages and disadvantages of social media marketing. The younger generation is skilled in handling fast communication using social media. It is important that those who are networking have social skills. Social media activities take time and energy, and require interest. In one of the studied companies the writer is never anonymous, but publishes both with picture and name: "Otherwise you lose a lot of this personal touch," the respondent explains.

The marketers also have to know about when the communication on social media is most relevant. The time of day when the post is published on social media could be crucial. The best time to post according to the

interviews, is when most customers are active on social media, usually late afternoon or evening, or possibly early morning. The respondent argues that it would look unprofessional to publish posts in the middle of the night, even if it would come from the restaurant. The hard part is to be visible in this industry, one of the respondents stresses. There is no point in just following what everyone else does, but to have courage to change strategy if you notice an exhaustion effect of any activity. Monitoring competitors' social media activities is part of the job, according to the respondent who stresses that you can be both inspired and discouraged by the competitors' use of social media.

It seems that some employees have performance anxiety when they are supposed to write on social media. "Then you have to encourage them in order to try to increase their self-esteem", a respondent stresses. The main focus is on the use of Facebook. Twitter can be a little more "cocky and cool," continues the respondent, "but it's not often you put the comments there because of lack of time". The respondent points out that it is important to have a real commitment to using social media to make it good: "You really must like it from your heart."

Several respondents stress that it is more difficult to plan marketing efforts in social media compared to the planning of for example radio or television campaigns because there is so much happening in the field. Working in this way can be difficult for those marketers, who have an extremely planning personality, one respondent point out.

4.3 The Perspective of the Customers.

4.3.1 Some Advantages for Customers Using Social Media

According to the marketers, those customers who communicate using the social media of the organization could receive more personal contact with the company than before. Such communication could lead to fast improvements of the quality of the organizations services. One of the companies had invited guests to blog in a special digital guestbook "Special Guest Room". It is a small tight group, and they write mostly positive comments, according to the respondent. It seems to be relatively rare that the customers express criticism via social media. One of the respondents thinks that it is predominantly women who write on the company's social media, because it is most women who visit the spa. But men would still often talk clearly about what they think. Maybe somewhat more men write negative posts compared with women, a respondent suggests. Communication with customers via social media can mean that customers share their personal experiences, but this was not perceived as a problem, according to one respondent. This often becomes evident when the customers are supposed to write motivations when they participate in a contest on social media. "Social media becomes like a living scrapbook", the respondent stresses.

Customers communicating on social media related to the organization could have some advantages comparing with other customers. They could for example be offered to participate in contests and winning prizes such as a free spa weekend, which is usually much appreciated and contributes to further spreading of the offer by the "fans". But customers do not like "being bombarded by offers", says a respondent. In some organizations the customers who book their stay using the web, could receive better prices. Those customers who do not use social media do not receive the same possibilities. One respondent comments however that he is aware that older people often do not use Facebook much, but they are trying to reach them through e.g. newspapers or television commercials.

5. Conclusions

The aim of this the article was to analyse the consequences of social media marketing from the stakeholders perspectives, according to the MOA-SM model and discuss whether social media marketing was a win-win situation or not for the stakeholders. The study was limited to six interviews with marketers in wellness companies in the south-west of Sweden. The results indicate that there is no simple win-win situation for the stakeholders. Instead management, the marketers and the customers could have advantages as well as disadvantages and challenges using social media marketing.

From the *management perspective* it is a challenge to organize the work and work processes in a relevant way of social media marketing in order to contribute to increased productivity and efficiency. It is for example a challenge to recruit staff with appropriate skills, and to ensure that their competences are developed and used

in relevant ways. Social media could be integrated with other systems, which could make the work more efficient and understandable, both for the employees and the customers. The benefits of social media marketing are often unclear from a management perspective and they have a challenge formulating the goals and policies of social media marketing as well as monitoring and evaluating the goals.

From the *perspective of the employees* working with social media marketing, their work situation has changed a lot. The work has become more stressful and demanding. The borders between private life and work life can become blurred. The work could also be more meaningful because of the informal contacts with the customers. A lot of new competences are needed, and continuously competence development is needed.

The customers' perspective is only indirect studied, but the results show that the customers who use social media marketing could have some advantages compared with customers, not using social media marketing. The customers using social media marketing could receive a more informal relationship with the company, and their views and attitudes could indirectly affect the services of the organization. They could participate in contests and sometimes receive lower prices for the services. The customers who do not use social media, do not have the same advantages.

Further similar studies need to be made, in order to deepen the understanding of the challenges of social media marketing from the stakeholders perspectives, and to compare with similar studies in other geographical areas.

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Children, Online Behavior and Organizational Studies

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Abstract: Organisational studies have predominantly ignored many subject areas and remains narrowly focused on traditional themes to inform study and research. Children and online behaviour is one such area that could potentially inform and enhance the subject discipline and enable a deeper understanding and exploration of both subjects areas. The role of the internet and social media in children and young people's lives today could inform organisations of the future by allowing them to foresee future behaviours and online risks. Children exist in organisations of their own but there has been very little research around their experiences within an organisational context that is seen as relevant to organisational studies. Perhaps there is some fear of placing any value and meaning on a child's juvenile perspective in a world that is considered to be serious and sober. It could also be considered that academics of organisational studies choose to ignore children due to the fear of being taken less seriously or jeopardising their future career. The fact that children are the main users of technology and the early pioneers, leading the way in their use of it, it makes little sense for them to be excluded from research in the field. Their experiences of social networking, cyberbullying, malicious gossip and blackmail are ever more relevant to business and management today. Organisations increasingly need to address issues around online behaviour that could be informed by the experiences and practices of a much younger generation.

Keywords: Organisational studies, Children, Online behaviour, Social media, Risk, Reputational damage

1. Introduction

Children and their experiences of social media has been a topic that has previously been ignored by organisational studies but is one that could potentially inform and enlighten research in this area. Organisational studies and childhood experiences are two areas that are highly implicated in one another and should not be seen as separate and distinct. Online behaviour is an example where an exploration and deeper understanding of both subject disciplines could provide unique insights and a fresh approach to addressing concerns and risk associated with online behaviour in young people and within a business and management context.

2. Organisational Studies and 'Empty Spaces'

Organisational studies have traditionally focused on organisational structures, processes and practices and identified how these influence the shape of social relations and create institutions that ultimately influence people and their behaviour. Generally contributions to research and study have been clustered around organisational behaviour, theory and culture to explore and expand upon an understanding of the field. Knights and Wilmott (2012) identify a wide range of social scientific disciplines in which the study of organisational behaviour draws from. These include sociology, psychology, politics and economics. Kavanagh (2013) explores a phenomenon which is argued has been largely ignored by scholars of organizational studies in the past and one which could be limiting research in the area of business and management studies. A region that is largely ignored but one that could potentially constitute a significant 'empty space' is that of children and childhood. A growing number of studies appear to demonstrate that this 'empty space' does not stand alone and provides substantial evidence to support the exclusion of other significant fields within organisational studies, including studies by Ingersoll and Adams (1992), Murphy and Johnson (2011, cited in Kavangh, 2013) and Riggio and Mumford, (2001, cited in Kavanagh, 2013). What is suggested overall is that there exist clear gaps in the field that could be explored further in order to provide significant contributions to the field. One particular study identifies that sustained attention to war and violence, racism and sexism, displacements, ill-health in the workplace, gender and sexuality have been ignored by UK based management academics (Kavanagh, 2013). Parker et al (2013) supports this argument by identifying unfilled potential within the area of feminist/gender theory in organisations and argue, "the more theoretically sophisticated work that is to be found in feminist and gender studies has not been explored in much depth." Pullen and Rhodes (2008) argue on the issue of gendered theorization of narcissism as it relates to self-identify of leaders in organisations. It is concluded that "while the value of existing theories of leadership and narcissism are acknowledged, it is noted that they treat narcissism in an implicitly masculine fashion.' Evidence suggests that organisational study is predisposed to turning a blind-eye to a number of areas and issues that could significantly enhance our understanding of the field. The phenomenon of children and childhood is one such area that has clearly not been considered to be relevant here. Kavanagh (2013) argues that "children and

childhood constitute a 'white space' in organisational studies, which should be now explored, mapped and analysed" rather than being seen as separate and distinct. Children and organisational studies are viewed as being highly implicated in one another, providing potentially rich grounds for an abundance of insightful and meaningful research.

However there appears to be resistance to research around children, their interactions and experiences and a misconception that they have little relevance to organisation life. Reasons for the inclusion are that children and organisations are essentially implicated in one another. The exclusion of children diminishes and biases theories of organisation; and enables the assumptions underlying the field of organisational studies to be challenged (Kavanagh, 2013). It is perhaps felt that until children have entered into adulthood and their thoughts and ideas have been already influenced by society and the world that they inhabit, they should be seen as insignificant and irrelevant to the field of business and management. Another thought could be the fear of placing any value and meaning on a child's juvenile perspective in a world that is considered to be serious and sober. It could also be considered that academics of organisational studies choose to ignore children due to the fear of being taken less seriously or jeopardising their future career (Kavanagh, 2013). Whatever the reason, it is clearly felt that children are not to be seen or heard.

3. Children, Organisations and Technology

There is potentially an abundance of insightful and relevant studies and lines of inquiry that are simply being ignored. One such study, as suggested by Livingstone (2009), could be how children interface with new technologies. Livingstone (2009) comments on the relation between childhood and the internet and identifies how studies related to society and the internet often exclude children and focus primarily on the adult population. Livingstone states (2009) that 'every one of tomorrow's adults is a child today' and argues that it is likely that understanding children's use of the internet today can provide a richer insight into that future than could equivalent paid to adults.' A child's experience of the internet may include many of the experiences encountered by adults for example, cyberbullying, stolen identities, blackmail and malicious gossip. All of which are presenting themselves as issues for organisations and employees today.

Children lives have changed dramatically since the advent of new technologies. The continued rise in the development of technology, apps, mobile technologies, social media and gaming is providing a rich ground for new experiences, skills and capabilities. The offline lives of children are becoming inextricably linked to their online lives and as a result their behaviour is being shaped and transformed unlike any generation that has gone before them. Research from Ofcom (2012) shows that '91% of all 5-15 year olds used the internet in 2012' and breaks this down to show that this includes three in four 5-7 year olds (74%) gaining access to the internet during that time. Holloway et al (2013) highlight a critical need for information about the internet-related behaviours of 0-8 year olds by identifying research which demonstrates that children are now going online at a younger and younger age. Britain is leading trends here, rather than following them. In 2007, 7% of ten-year-olds in Britain had a webcam. As a result not only are they experiencing the internet from a young age but also the way they are interacting with it is shifting from simply typing content online to a much more visual, video orientated experience (Economist, 2007) encouraged through the use of apps such as Snapchat and Instagram. O Keeffe (2011) highlight some of the risks associated with youth using social media and discuss peer-to-peer, inappropriate content, lack of understanding of online privacy issues and outside influences as major concerns of this generation.

While policy makers deliberate and discuss the best ways to encourage the positive use of technology and minimize exposure to risk, children will continue to explore the internet and all of its many features both good and bad. It is frequently children that are carving out new ways to interact, communicate and engage with technology. The constantly connected 'digital generation' are and will continue to break new ground in the way the internet evolves. It is more frequently adults, institutions and organisations playing catch up behind a much younger generation in order to survive and remain competitive. Livingstone (2009) highlights how children and young people are youthful experts or pioneers leading the way in their use of the internet yet are the groups that are particularly vulnerable to the risks of failing to use it wisely. A key report by Livingstone et al (2013) explores the issue of children online and highlights how the 'adult society (parents, teachers, policy makers and the media) has shaped the policy agenda for understanding online risk and managing internet safety' and discusses how most research has asked children about risks that worry adults rather than

discovering what concerns children themselves. For children especially, the online/ offline distinction is ever less relevant and the challenge for policy makers in addressing this diversity of risks is considerable.

Livingstone (2008) highlights how may new trends, including the internet and social media turn out not only to include changes in technology but also, more fundamentally, changes in contemporary childhood. If the internet and social media are having an impact on children then it is likely that some comparison can be made to the impact that technology has on adults both inside and outside of their respective organisations. Perhaps then a theoretical understanding can be developed around a multitude of organisational behaviours including online behaviours. Therefore an argument continues to evolve around the issue of children, organisations and technology. Alvesson and Karremans (2007) believe that theory development is through an exploration of the differences between similar domains. The early life experiences of children could potentially provide some insight into organisational practices in adult life. Kavanagh (2010) identifies how the study of children can provide valuable insights into organisational behaviour by highlighting a study where young children out-performed business school graduates and CEOs in a simple team building task. Resulting in valuable insights into group dynamics, problem-solving and decision-making amongst adults (and children.) With offline behaviours becoming ever more present and entangled in the online lives of adults there is likely to be some value in the study of children and their behaviour online within organisational studies

4. Risk, Social Media and Reputational Damage

Risk within an organisational context is generally defined as anything that can impact on the fulfilment of corporate objectives. Risk management supports organisations in identifying and evaluating risks in a constantly changing and challenging business environment. Risk management appears more commonly to be focused around IT security, infrastructure and policy and associated to organizational damage in terms of computer theft, viruses, hardware or software faults and IT project failure (Hopkins, 2012). However there is one issue that is frequently overlooked by organizations that can cause immeasurable damage to its reputation and business operations; the issue of behavior or more specifically online behavior. It is becoming increasing apparent that organizations are being forced to address the matter of reputational damage caused by behaviour online. The media regularly reports on issues of the reputational damage to organizations caused by the use of the internet and social networking sites. Research identified by Aula (2010) highlights that "leading European managers consider reputational risk to be the primary threat to business operations and the market value of their organizations." A recent example is that of a woman sacked as communications director within an organization for having made an offensive AIDS tweet that linked Aids with race (guardian.com, 2013). Another example is that of a woman, now former trainee accountant who posted a message on Twitter about knocking a cyclist off his bike (BBC, 2013) and has been found guilty of driving without due care and attention. IRM (2014) identifies how the increased use of social media has the potential to offer countless benefits to business but also the potential to do a great amount of damage and argues that "cyber risk is never a matter for purely the IT team as human and organizational factors are just as important as the right hardware or software". Organizations increasingly and consistently need to address issues around social media, their online presence and the use of mobile technologies, all of which are influenced in some way by the behavior of either their employees, customers or stakeholders. IRM (2014) highlight research which found that 90% of respondents said that their organization allowed the use of personal mobile devices for business use but only 37% exercised any control over security. If the majority of organizations are unclear around security issues online it is unlikely that they have exercised any control or addressed any concern in relation to the behavior of employees online.

5. Methodology for Collecting Data From Young People And Adults

Due to the limited amount of knowledge and research in relation to this topic an exploratory research approach driven by qualitative data is appropriate. The outcome of which will enable a greater understanding of the impact of children's behaviour on organisations and organisational studies. Exploratory research develops a better insight into a particular topic where very little, if any, earlier work refer to (Wilson, 2014). Qualitative data are characterised by their richness and fullness based on the opportunity to explore a subject in as real a manner as is possible (Robson, 2002 cited in Sauders et al).

Data will be collected from children upwards of key stage 3 (KS3). Due to their age it is important to consider how they might respond within different environments and group settings. Shaw et al (2012) discusses participatory research in relation to children and young people and states that 'this approach to research also

seeks to address some of the power imbalances between the researcher and the researched, which can be compounded for children and young people by the adult–child dynamic.' Involving children and young people in research can be beneficial to its dissemination by raising awareness of issues that affect them and enable them to share their own related experiences, which can have a powerful impact on audiences of all ages (Shaw et all, 2012). A child's perspective is of paramount importance in order to identify their experiences and interpret their understanding of online behaviour. Within a wider context research involving children, if used for policy formation is likely to lead to policies that reflect a young person's priorities and concerns.

Secondary schools will be selected and invited to participate from the Northamptonshire region where members of the research team have an existing relationship. Focus groups from each year group will be used in place of one-to one interviews with children as this will enhance the quality and quantity of data gathered (Grieg et al, 2007).   It is more likely that children will feel at ease amongst their peers than with adult researchers. The age of children participating in the research has a significant impact on the methods chosen to collect data. All research tools will be piloted with children of the same age to ensure that the language is appropriate and time scales effective. A multi-method and flexible approach will be used which includes a range of creative methods, including drawing pictures, creating posters and interacting with technology (Tisdall et al, 2009). The focus group will be set within a very informal and relaxed atmosphere. The possible short attention span of children may require several short sessions rather than one long session in order to collect data that is meaningful and robust but this will be addressed during the pilot session. The focus groups will be held during normal Information and Communications Technology (ICT) lessons across each year group. During the pilot study it will be decided if same sex focus groups will be studied or if it would be more appropriate and beneficial to study mixed groups.

6. Ethics

Ethical approval of the proposed research will be gained from the University's Research Ethics Committee, before the study, following the institution's ethics code and procedures. All participants will be informed about the aim and nature of the study. An information sheet will be sent to each participant and will include the title and purpose of the project and details of the research team. It will also explain what is expected of participants. For example, what is required of them, how the information will be used and for what purpose. The rights, safety and well being of participants will be the key considerations in the design and conduct of the research. The majority of work will be carried out on participate premises.

6.1 Adults as Research Participants

Data will be collected from adults upwards of the age of 18, during their first year of university and from adults within an organisation environment. Consent will be requested from employees and employers before commencing with the study. Information sheets and consent forms will be sent to all adult parties involved in the study in order to gain permission from them to commence with the study. Interviews and observations with adults will be recorded with their permission and all participants will be informed that they are not obliged to answer any question or respond to any statement unless they wish to do so. Participants will be made aware that they may stop the interview/observation at any time and in addition withdraw from the research.

6.1.1 *Children as Research Participants*

Children participating in the research will receive information about the project in a language that they can understand and in a format that is appropriate and attractive to them. Consultations may be required with parents and teachers at this stage in order to address any particular areas of concern. Consent from children will also be requested at every stage of the data collection process on a continuous basis both written and verbal. If at any time a child does not want to engage, answer a question or be involved in the focus group then they may decline at any stage without any consequence. If a child exhibits behaviour where they seem uncomfortable in a focus group setting then they may leave at any time without any consequence. This will be explained to the children at every stage of the data collection process. All research will be conducted with integrity without any element of deception.

Personal details will be kept confidential and separate from the data, and stored in a locked filing cabinet or password-protected computer. Participants will be informed that their personal details will only be kept for the sole purpose of the research and will be destroyed 3 months after the completion of the research.

All participants taking part in the interview study will be sent a copy of the transcript to check it is an accurate representation of their narrative. They will also be given the opportunity to receive feedback on the results of the studies. Feedback will also be given to children involved in the study in an appropriate format and in a language that they can understand.

7. Conclusion

The internet and social media are already shaping and forcing changes within childhood, how children study, interact, work together, socialise, take risks and communicate; so it make sense for organisational studies to appreciate a little about these behaviours and recognise the implications that they might have for business and management. Young people's experiences of the internet are ever more relevant today. With children as one of the primary users of the internet and organisations trying to exploit technology to gain advantage, it makes little sense for children to be divorced from organisational studies.

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Social Media in Crisis Communication: What Can we Learn From Elite Sport?

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Abstract: Social media engagement is changing the relational dynamic between organisations – and individuals - and their publics. This is particularly evident in the world of elite sport where the market value of an elite athlete is measured by their public reputation which is pinned on healthy relationships with stakeholders, such as fellow athletes, team managers, coaches and, importantly, fans (Hopwood 2007). In fact, social media analysts have attributed much of Twitter's growth to early adopters in the sports world. As a continually expanding global business, sport has to grapple with the challenges of how to harness this uncontrolled medium to best advantage, particularly in times of crisis. Social media platforms breathe life into crises and the world of the elite athletes, who often enjoy a privileged existence beyond the reach of their fans, is no exception. Sport inherently is a breeding ground for crises, particularly of a reputational nature. Fuelled by social media, transgressions by elite athletes spread like wildfire worldwide. These can range from in-game competitions, inappropriate tweeting about private lives, entering into' virtual verbal spats' with fans, detractors and fellow athletes to the arguably more sensational admission of active engagement in doping. Using a case study approach our research examines the intriguing - and still evolving - case of professional elite cyclist Lance Armstrong's fall from grace, when in January 2013 he confessed to an audience of millions on the US-based Oprah Winfrey television show that he had a lengthy history of doping, despite years of denial. The case study on Armstrong, a devotee of Twitter, provides an insight into the world of elite sport and the powerful dynamics of social media to champion heroes and demonise those who fall from grace by their own hand. Although Armstrong is a prolific user of social media platforms in order to engage with his fans he chose traditional media through which to "come clean" on his involvement in doping. We argue that Armstrong's choice of Oprah Winfrey to host his "confession" on her national television program in fact alienated many of his legions of fans on social media, where reaction ranged from disbelief to shock. We argue the reason is found in the bonding power of social media to build personal bridges between an elite athlete and their fans, who can be forgiving of transgressions, but that extends only so far. Secondly, we found that Armstrong's failure to apologise without reservation to his fans in his 'confession' intensified social media outrage . This paper examines the bond between fans and sport in the context of social media in order to examine how this relationship could foster forgiveness for elite athletes who confess to transgressions. Our research focusses on how the convergence of social and traditional media is impacting the sport/fan relationship. The findings of this research will be of relevance to anyone with an interest in the business of sport and social media relationship management within the wider public relations context.

Keywords: social media, sport, crisis communication, fans.

1. Research Methodology

Weerakkody (2009) points out that a case study can examine an 'individual, a group of people, an organisation, an event, a process, an issue or a campaign' (p. 229). The process is suited to the study of communication and public relations. The approach is exploratory and 'used to examine what others have done, and what worked and what did not work in a given case' (p.229). Gillam (2010) states that a case study answers specific research questions. For this paper, the initial research questions were:

(a) What role does social media play in the bond between fans and elite athletes?
(b) How important is this role in a case of wrong-doing?
(c) How did Armstrong, a consumer of social media, manage his Twitter account in relation to his televised confession?
(d) What was the reaction of his social media fan base to the confession?
(e)

Gillam (2010, p. 101) notes that the 'meticulous description of a case can have an impact greater than almost another form of research'. The methodology adopted for this paper is based on 'naturalistic research', a legitimate method of inquiry (Gillam, 2010) to explore the underlying dynamics behind the social media relationship between Armstrong and his fan base. Following a literature review on the relationship between fans and elite athletes, the authors conducted a Google search, using terms such as Armstrong confession, Armstrong fan reaction and Oprah Winfrey and Armstrong. The search results were then examined for primary evidence with a particular focus on quantitative Twitter reactions, statements issued by Armstrong and

authorities and media reportage of the confession and fan reaction. The confession itself was viewed and the content of the confession was analyzed against the theoretical constructs of Coombs and others.

2. Fans, Elite Athletes and Social Media

Sport is a reflection of society, both good and bad, and is compelling because of its ability to connect people emotionally rather than rationally. As Boyle (2013) observes: "[the] sporting discourse is often about emotions and opinions deeply held and readily expressed by athletes and fans". Dimeo (2007, cited in Lopez 2010) argues that sport has a war-like persona therefore,

> "is fundamentally about winning, hierarchy, elitism and losers get nothing. It encourages people to think of others as enemies. Bias and partisanship are actively promoted. It demarcates the best from the rest. It is all about physical and social superiority. It is a harsh system that is not just intolerant towards failure but explicitly rejects those who fail".

The battle-ground environment of sport unifies fans (Osborne 2013) who link their social identity to the on-and-off field performances of athletes and teams (Sanderson and Emmons 2014). This bond arguably can blossom into a religious-like fervor (Garratt 2010) and beyond with an "identification so intense that some fans are willing to engage in hostile and criminal acts towards opposing teams and players" (Sanderson and Emmon 2014). Although there is no universal definition of a fan (Osborne 2013), scholars have explored fan motivation and how their allegiance develops in favour of certain clubs and athletes. For example, the revised Funk and James (2006) Psychological Continuum Model sets out the process of becoming a fan: awareness, attraction, attachment and finally allegiance. In their study of an Australian Football league fan, de Groot and Robinson note that the "feeling of belonging and closeness is achieved by fellow group members sharing important experiences and on this basis build their own identity" (2008). In a study of sport bloggers McCarthy (2014) found that they were motivated by a sense of community by sharing and meeting with like-minded fans and "somehow shaping, or shaping the narrative of sport". Blogging, they observe, allows fans to "regain a sense of common ownership of sport which has been lost" (2014). To sustain fan support, Taker (2012) argues that it is crucial for athletes and clubs to frequently interact with fans so they develop strong bonds with the team, which creates a ripple effect that attracts others to become involved. In the context of social media, fans expect content to be of maximum interest, which in turn will increase revenue generated by an engaged fan base (Taker 2012). In reality, however, Taker (2012) argues that the sport industry often takes fan loyalty for granted rather than engage in two-way symmetrical social media conversation. For example, in the UK, the Newcastle United Football Club Supporter Trust found only 3 percent of fans felt the club was engaging with them. The vital importance of fan engagement is evidenced by the emergence of groups such as The Fan Experience Company (UK) and Fan Engagement (the Netherlands) both of which are actively engaged on social media.

3. Building Relationships on Social Media

Social media has changed forever the sports communication paradigm. Arguably, it has empowered fans to become participants rather than placid observers (Kishner and Crescenti 2010). Gantz, therefore notes,

> "Modern technology magnifies fan voices so they can be heard far and wide. Lurking or active participation in blogs and websites provides a connectivity and sense of extended community fans value. It democratizes sports and provides fans with a base of information and influence they would not have as individuals. These forums can break news as well as serve as a bullhorn expressing and galvanizing fan pleasure or disgust". (2012)

Twitter has been described as two-way talk which has perks which also allows athletes to speak on their own terms (Gregory 2009). Athletes have also noticed that where once they were followed by fans on Twitter, they are now actively chased. When fans tweet athletes messages and they get a response, this is the modern equivalent to an autograph (Wertheim 2011). The 140-character micro-blog Twitter is one of the most popular platforms for connecting fans (Highfield et al. 2013, Laird 2013, Hambrick et al. 2010) while Facebook remains the top preference for following and discussing sport. Hambrick et al. (2010) observe that Twitter is popular with athletes to connect directly and in real-time with fans without any filtering by public relations departments, clubs and traditional media. The choice of using social media, however, remains in the domain of the athlete. As Frederick et al. (2014) note: "The athlete must choose to take down that wall, effectively transforming the everyday fan from voyeur to digital acquaintance". Athletes, therefore, become content generators "deciding not only what to discuss but how to discuss it and with whom to discuss it" (Frederick,

2014). The use of social media to engage with fans extends to referees, who are responding to questions about on-field decisions in an effort to build relationships (Glynn 2013). As one referee noted: "For a long time there has been a view is that we just turn up for games, make decisions that are viewed as wrong, take no accountability and then go back into our box". (Glynn 2013)

Social media helps tighten the bond between the fan and the sport entity. A recognized fan state is known as "basking in reflected glory" (Cialdini et al 1976), also referred to as BIRG-ing. This is a recognized state in which fans, through their association with a successful team or athlete, develop feelings of success and belonging, thus creating a stronger emotional bond between themselves and the sport entity. Social media, by its very nature, is proving to be a powerful enabler of this state which is a crucial element of fan engagement.

4. Social Media in a Sport Crisis

Social media platforms breathe life into a reputational crisis (McLean 2013). With access to social media available on a myriad of mobile devices, it takes little time or effort for fans to voice their opinions in real-time. For example Sanderson (2013) analyzed Facebook posts regarding a voluntary move by a football coach between teams. Fans of the team the coach departed responded with posts ranging from character assassination, threats and intimidation to rallying support for a future without the coach. Therefore, social media platforms become valuable tools in uniting a fan base (Brown and Billings 2013), frequently to defend the reputations of athletes and "build community and promote preferred representations of athletes and sports figures" (Sanderson 2013). Sanderson (2010) observes that elite athletes can counter negative media coverage by encouraging their social media fan base to support them. Seeking such support has benefits as Sanderson (2010) explains:

> "In such circumstances, it seems plausible that communicative exchanges between professional athletes and fans via blogs would empower professional athletes to be more open in their disclosures about such events, which may translate to fans expressing support for the athlete's openness."

5. The Armstrong Enigma

> "@lancearmstrong *Imperfect guy in an imperfect world. Founded @Livestrong. Raised half a billion dollars to fight cancer. Raced bikes. Finally broke 80. Austin, TX · mellowjohnnys.com"* (Lance Armstrong's Twitter biography)

Lance Armstrong was undoubtedly a global sporting icon but an individual who, as his career and image burgeoned, polarised opinion. Until 1994, which was the year that he began working with Dr Michele Ferrari who was known to dope cyclists, Armstrong achieved moderate, but not outstanding success in his sport. In 1995, his winning streak began and he rose to 7th place in the world rankings and joined the French team *Cofidis* but in 1996, aged just 25, he was diagnosed with testicular cancer which swiftly metastasised throughout his body and from which he was not expected to recover. However, following aggressive treatment, by early 1997 he was in full remission. Just a year later in 1998 he got back on his bike and made his post-cancer comeback:

> "Sponsored by Nike, the US Postal Service (USPS), Discovery Channel, RadioShack, Anheuser-Busch, Oakley, Nissan, Trek-Bicycle Corp, Johnson Health Tech, SRAM Corporation, FRS, Easton-Bell Sports, Honey Stinger and 24-Hour Fitness Gyms, Lance build a team strong in cycle technology, sports gear, nutrition and capital." (Young, 2013)

Against seemingly unbelievable odds Armstrong won the first of his seven consecutive Tour de France races in 1999 and became a living legend. He acknowledged this himself during his opening speech to the World Cancer Congress in Montreal in August 2012. This coincided with his announcement the previous week that he would no longer challenge United States Anti-Doping Agency (USADA's) drug charges against him and USADA throwing out his competitive victories dating back to 1998, which included all seven Tour wins: "My name is Lance Armstrong. I am a cancer survivor. I'm a father of five. And yes, I won the Tour de France seven times." (Associated Press 2012). Armstrong's inspirational and iconic status was further enhanced by his links with the Livestrong Foundation of which he is acknowledged as "Our Founder" on the organisation's website (Livestrong.org 2013). "He and Livestrong were indivisible; he was not merely a rider, he was a cancer survivor. He credited his fitness and willpower with his 'beating' cancer, which appeared to convey greater cult status." (Young 2013). Lance Armstrong helped to create and perpetuate for himself an image of the

invincible sporting hero. What the millions of fans around the world did not or perhaps did not want to see was that underneath it all, Lance Armstrong was a cheat who used his power unethically (Young 2013)

6. Armstrong Goes Against the Flow

Player transgressions - on and off the field - directly threaten relationships with fans. Therefore, transgressions frequently result in players confessing and seeking forgiveness (Sanderson and Emmon 2014). This strategy places fans in the position of having to make a choice about whether or not to forgive the transgression. Confession is one of the fundamental strategies to reduce negative stakeholder reactions to wrong-doing (McDonald 2010, Coombs 2012). One such approach to confession is the notion of self-disclosure, or stealing thunder, which emerged within the legal context where defendants who fessed-up of their own accord to damaging information, the outcome had less negative impact that had it been brought to light by the prosecution (Williams et al. 1993). The strategy is also found to reduce negative media coverage of a transgression by moving the media forward to a frame of "what comes next" (Wigley 2010).

On two nights in January 2013, Lance Armstrong, world renowned cyclist, cancer survivor, Olympic Bronze medalist and winner of an unprecedented seven Tour de France titles finally admitted to US chat show host Oprah Winfrey and a television audience of 4.3 million what many had long suspected – he had used banned performance enhancing drugs (PEDs) throughout his professional cycling career. In a statement released within an hour of the interview's conclusion, Travis Tygart, CEO of (USADA), the organization with whom Armstrong had been battling for many years against persistent allegations of doping said "Tonight, Lance Armstrong finally acknowledged that his cycling career was built on a powerful combination of doping and deceit." (USADA 2013).

For more than a decade, Armstrong strenuously denied any involvement in doping and verbally attacked and sued anyone who suggested that he did. From winning his first Tour de France in 1999 – ironically hailed as 'The Tour of Renewal' as it was intended to bring the Race out of the shadows of doping accusations - until he finally gave up his fight with USADA in August 2012, Armstrong, as leader of the U.S. Postal Service cycling team was involved with what Tygart described as ". . . the most sophisticated, professionalized and successful doping program that the sport has ever seen. . a program organized by individuals who thought they were above the rules and who still play a major and active role in sport today." (USADA 2012).

7. Why Oprah Rather Than Twitter?

So, why did Lance Armstrong decide to finally admit to his transgressions and why did he choose the public forums of the Oprah Winfrey Show and Twitter as his preferred communications channels? It is evident that Armstrong is an individual who is very used to being in control and controlling and his choice of media channels for his mea culpa reflect this. As a televised interviewee, confessing all to his friend Winfrey, he could both craft his message and his image. King (2008) argues that television talk show programs "selectively exploits and manipulates the confessional process" where celebrities can engage in a form of damage control. Televised confessions are designed and delivered to meet the demands of performance, competitive advantages and audience expectations. As King (2008) observes, "confessions on television are staged for entertainment without deep moral consequences. The tears and ardent pleas for forgiveness are tied to the occasion and quite often faked". It is suggested that by his use of Oprah Winfrey and Twitter as his confessional platforms, Armstrong felt that he could control his message. Arguably the fundamental principles of crisis public relations are these: knowing your audience; crafting the message accordingly; communicating a credible message through appropriate communication channels with the ultimate objective of getting the audience onside: apologizing for a transgression and making amends. However, Armstrong's communication behaviour since August 2012 suggests that he feels that such rules do not apply to him as even as recently as 7 November 2013 he was sniping with Tyler Hamilton (a previous cycling team mate) on Twitter (@lancearmstrong @Ty_Hamilton twitter exchange 7 November 2013). Armstrong has never actually apologized for his taking of PEDs, maintaining throughout that the fault is with the sport of cycling rather than him the individual, leading to claims of arrogance particularly when he aligned himself with former President Clinton's rehabilitation stating that Clinton was a "hero of mine" that he wanted to copy him in becoming "president of the world" and publicly stating that "I'm like Bill Clinton and people will forgive me." (Bates 2013).

Armstrong polarizes opinion and therefore analysis of his "confessions" and his media strategy will reflect this. In these days of "open access" communication a polarity of viewpoints is to be expected. Nonetheless, from a

crisis public relations perspective, it seems more important that individuals and organizations who are mindful of their image and reputation, together with their relationship management strategies give closer consideration to how and when they communicate with their publics, particularly when the platform of choice becomes social media. From the perspective of the sports personality this is even more critical. "Armstrong has been a strong proponent of Twitter since its inception, and social media analysts have attributed much of Twitter's growth to early adopters in the sports world such as Armstrong." (Fisher 2009 cited in Hambrick et al 2013). Though his current Twitter followers stand at 3.8m he is losing followers at the rate of 160 per day (http://twittercounter.com/lancearmstrong) which suggests that his communication strategies may be backfiring (Hambrick et al 2013).

Since "coming clean" in January 2013, Armstrong has shunned the media spotlight and reverted to using Twitter, though to a lesser extent than previously. An analysis of his current Twitter usage indicates that he focusses predominantly on his family, social and charitable activities. Much of his Twitter activity is devoted to supporting and encouraging cancer sufferers, another example perhaps of, his attempts to salvage relationships. There are also instances where he engages directly with fans who continue to press him for an apology, in one case responding to a young fan who has written a blog in which he eloquently expresses his disappointment in the cyclist thus:

> '@Michael_Better *Mike, read your piece & I don't take your words lightly. I am truly*
>
> *sorry for the disappointment and betrayal you feel.' (Lance Armstrong Twitterfeed, December 10, 2013)*

No outright apology, perhaps, but certainly an expression of regret. He is also using Twitter to communicate with journalists, wishing Paul Kimmage, one of those who originally exposed him, a happy New Year on 31st December 2013. In another move, on 8th January 2014 Armstrong chose to confirm via his Twitter account his willingness to co-operate openly and honestly with an independent commission into cycling's doping past.

8. Conclusion

We argue that Armstrong's failure to engage with social media at the time of his "confession" was a missed opportunity to capitalize on the empathy of fans, who feel valued when asked for forgiveness (Sanderson and Emmon 2014). As Sanderson and Emmon (2014) explain, fans can identify with mistakes, confessions and forgiveness. For loyal fans, forgiveness may be the only course of action. A key finding is that fans on social media are part of today's sport DNA and should not be ignored in the confession process when player transgressions happen on-or-off the field. Fans, we suggest, should be fully engaged in the confession process, which may bolster the chance of forgiveness and the opportunity to salvage the relationship with genuine two-way dialogue. Social media provides the ideal platform for such engagement but effectively utilizing its undoubted benefits for mutually beneficial outcomes is a whole new ball game for sports business.

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Perceptions of EFL Students on Educational Use of Facebook

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Abstract: The aim of this study is to detect EFL students' perceptions on the educational use of Facebook. The sample of the study included 20 B2 level preparatory school students studying at Anadolu University, School of Foreign Languages. A Facebook group called AU YDYO B2.2 Group 5 was created by one of the teachers teaching in that class. The teacher and the students shared classroom assignments, extra materials, announcements, quiz marks and FAQs about online study for 8 weeks. The student perceptions were collected through a questionnaire developed by the researcher at the end of the 8-week period. In the application of the questionnaire, apart from the personal information about the students and some questions regarding the use of Facebook, there were three parts as student-student interaction, student-teacher interaction and student-content interaction. The students were asked to rate how much they agreed with the statements on a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. Before the actual data collection, the questionnaire was piloted with a group of students. The results of the study revealed that Facebook assisted language learning in terms of sharing assignments, accessing the lecturer, visualizing the course content and collaboration among students. Most of the students had positive opinions about using Facebook for education. However, some students had negative opinions.

Keywords: Social networking sites, Facebook, educational use of Facebook, Facebook for ESL/EFL purposes, Facebook for teaching English

1. Introduction

Starting in 2004, Web 2.0 became a collective term for a mass movement in society: a movement towards new forms of user engagement, supported by Webbased tools, resources, services and environments (Sousa & Gomes, 2012). Wikis, blogs, instant messaging, internet telephony, social bookmarking, and social networking sites are some of the examples of Web 2.0 technologies. These new technologies make sharing content among users and participants much easier than in the past and change the way documents are created, used, shared, and distributed (Dearstyne, 2007).

Social Networking Sites (SNS) are in the center of these new types of communication systems. As Ahn (2011) states, teenagers are the most prolific users of SNS and they have been found to spend considerable portion of their daily life interacting through social media. The widespread use of information and communication technologies in every field, especially in education, brings forward the idea of their employment by teachers and students intensively.

Social networks are seen as a "support for interaction between learners facing the common dilemma of negotiating their studies" (Selwyn, 2009) and helpful tools in "developing preliminary relationships between all first year students as it negates key pitfalls such as language barriers and social inhibitions" (McCarthy, 2010).

2. Facebook

Facebook is a social networking site that enables people to interact and exchange information. It was designed by Mark Zuckerberg in 2004 for Harvard university students to communicate with one another. Later, it spread across America and then around the World.

In very general terms, users of Facebook create their profiles, have friends and write comments on their friends' profiles or social contents. It has a considerable number of users around the World. Currently, there are **30,473,280 Facebook users in Turkey** that makes it number **five** in the ranking of all Facebook statistics by country after The United States, Indonesia, India and the United Kingdom (http://www.socialbakers.com/facebook-statistics).

As Bosch (2009) states generally, research into Facebook falls into one of the following four categories: social networking and social capital, identity construction, concerns with privacy, and the potential use of Facebook for academic purposes (including use by librarians).

Madge, Meek, Wellens and Hooley (2009) characterise Facebook as providing the 'social glue' in helping students to settle into university life', but while recognising its educational potential, express caution about invading a social networking space that students clearly feel is theirs (all cited in Baran, 2010). Mazman & Usluel (2009) state that some courses in higher education can be carried out on Facebook and student learning can be investigated in detail. Baran (2010) has found out that students find Facebook an effective tool in communicating with their peers and teachers.

According to Bosch (2009) one might assume that students use Facebook to broaden their existing social networks and meet new people, e.g. for dating, whereas others may use Facebook to consolidate existing social networks.

Kosik (2007) states that some students use Facebook for academic purposes, more specifically to contact people in their classes to get information about assignments, with some stating that they preferred it to the university education software programme because it provided more immediate responses. Studies by Selwyn (2009), Greenhow and Robelia (2009), Selwyn and Grant (2009), and Usluel and Mazman (2009) lead to the conclusion suggesting students generally accept Facebook as a social technology rather than a formal teaching tool.

In educational settings, Facebook is used for sharing resource books, announcements, group work, applications and lessons. Teachers and students can send the lesson materials, addresses of web sites and videos, share student presentations, homework and other materials by having links via google.

Carrying out a study with 82 English language teachers in Turkey, Istifci (2014) has found that teachers in her study accept Facebook as a good way of communication between students and teachers and they can share information about lessons, homework, some duties or educational studies.

In terms of student ideas about Facebook, Istifci (2013) conducted a study with 78 students in different departments of Anadolu University, Turkey about personal use, purpose and educational use of Facebook. This study indicated that students usually use Facebook to share projects and homework and to support their academic studies but they do not necessarily perceive Facebook as a formally planned element of the teaching and learning. They mostly use Facebook to communicate with friends.

This study aims at finding out students' perceptions on educational use of Facebook. The research questions of the study are as follows:

1. What are the perceptions of B2.2 level EFL students on the educational use of Facebook?
2. What do they think about the current application of Facebook in their class?

3. Methodology

3.1 Participants

Participants of this study are 20 B2.2 level EFL students at the School of Foreign Languages, Anadolu University, Turkey where they enrolled in an intensive English program that they had to finish successfully in order to start doing their major in the following year. The students were expected to take a certain number of quizzes, exams and prepare a portfolio as well as doing online activities related to the program. A Facebook group called AU YDYO B2.2 Group 5 was formed with the students in the class. The teacher and the students shared classroom assignments, extra study materials, announcements, quiz marks and FAQs about online study (The group can be reached at https://www.facebook.com/groups/561881040557989/).

3.2 Instrument

The questionnaire used in the study was taken from Keles & Demirel (2011) and Grosseck et. al (2011) and developed by the researcher. It was applied at the end of the module in their usual class hour (45 minutes) by one of the teachers. In the application of the questionnaire, apart from the personal information about the instructors and some questions regarding the use of Facebook, there were 3 parts as student-student interaction, student-teacher interaction and student-content interaction. The questionnaire was applied in

Turkish and then translated into English. The students were asked to rate how much they agreed with the statements on five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. Before the actual data collection, the questionnaire was piloted with a group of students in the middle of the 8-week module and some adjustments were applied.

4. Findings

The first part of the questionnaire aimed to identify personal information about the participants. As Table 1 reveals, students use Facebook everyday and their usage ranges from 15 minutes to more than 3 hours. 19 students state that they are a member of a group.

Table 1. Personal information

Gender	Number
Woman	7
Man	13
Age	**Number**
18	1
19	8
20	7
21	2
23	1
27	1
How often do you use Facebook?	**Number**
Everyday	15
Once or twice a week	5
Once or twice a month	0
Once or twice a year	0
How long do you use Facebook?	**Number**
Less than 15 minutes	4
About half an hour	7
About one hour	3
One -three hours	3
More than 3 hours	3
Are you a member of a group in Facebook?	**Number**
Yes	19
No	1
Which groups are you registered as a member?	**Number**
Student groups (faculty, department, 9 alumni)	18
Common interest groups (hobby, 27 sports, music, politics)	13
Internet and Technology groups 0 (computer, software, hardware)	9
Organization and Association groups 15 (social clubs, charity)	7

As an answer for the first research question, the second part of the questionnaire aimed at finding out students' perceptions about the educational use of Facebook. The questionnaire was divided into three parts: student-student interaction, student-teacher interaction and student-content interaction.

In erms of student perceptions, most of the students think that Facebook increases and affects interaction, increases collaboration and sharing among friends, helps establish positive communication in terms of student-student interaction. Most of the students also agree with the statements in student-teacher interaction section. They agree that Facebook helps establish positive relations with the teacher, makes getting feedback from the teacher easy, increases sincerity and affects communication positively. Student-content interaction is divided into two parts as learning course content and access to course materials. Students agree that Facebook contributes learning, helps review the lesson, contributes to the lesson visually, provides regular study and makes following the lesson easy. In terms of access to course materials, most of them agree that Facebook provides access to different sources, makes reaching the sources easy and affects reaching the sources positively (see Table 2.)

Table 2. Student perceptions of educational use of Facebook

	1	2	3	4	5
Student-student interaction	completely disagree	disagree	undecided	agree	completely agree
increases interaction			1	17	1
does not affect interaction	2	14	1	3	
makes communication easy with new friends	2	1	8	7	2
increases sharing with friends			2	16	2
increases collaboration		1	3	13	3
helps positive communication			7	11	2
Student-teacher interaction					
affects communication	1	2	3	12	2
increases communication	1	4		14	1
helps interacting with the teacher		1		14	5
makes getting feedback from the teacher easy		2	1	13	4
increases sincerity in communication		3	4	12	1
affects communication positively		1	6	12	1
affects communication negatively	4	4	6	6	
Student-content interaction					
Learning course content					
does not contribute learning	5	11	2	2	
helps making lesson review	2	6	4	7	1
conributes to the lesson visually	1	5	3	11	
provides regular study	6	4	6	4	
makes following the lesson easy		3	4	12	1
Access to course materials					
provides reaching different sources			3	14	3
does not affect access to materials	5	10	1	4	
makes reaching the sources easy	1	1	1	16	1
affects reaching the sources positively	1		3	15	1

As an answer for the second research question, students' perceptions on current Facebook application were gathered. The students were asked to write their perceptions freely. After answering the questions in the questionnaire, they were given time to write about their perceptions on the current application of Facebook. This writing phase lasted for 15 minutes. All the thoughts of students were listed since there were only 20 students in the class.

As the perceptions of students reveal, most of them find the application of Facebook useful. Only some of them feel that there are too many shared materials and they found it difficult to follow them. Most of them think that sharing some materials in a Facebook group helps them learn better, improve communication with their classmates and teachers, and keep up with the new announcements and homework. Some of them state that a Facebook group may be optional not compulsory.

Some of the ideas are as the following:

If we shared homework and other assignments in class, it would be more beneficial. We are given last minute assignments in Facebook and we are expected to do them. It is a bit strange (St. 1)

İt is good to share homework and materials in Facebook. Moreover, students can see their marks and absenteeism (St.2)

Our Facebook group was beneficial in terms of following the lesson, reaching the materials. I could easily follow the lessons that I missed in class. Maybe we could share other websites, songs or exercises more (St.3)

It is a good application in terms of communication, access to new materials and improving the success but it is wrong to be responsible for all the shared documents without doing them in class. Being a member of the group should not be compulsory (St.4)

We can access new materials easily but sharing lots of documents causes pollution (St.5)

It makes easy access to classroom materials and helps learn the lesson better (St.6, St.7)

It was good to see the announcements but following the group was unnecessary and difficult because of too many documents (St. 8)

I liked this application because I can have activities in and out of class (St.9)

In general it is good but there are too many assignments (St. 11, St. 12, St.14)

It helps to develop good relations between students and teachers (St. 13)

It was helpful to reach other materials but it is not suitable to make everybody responsible for the materials shared here because access to the Internet can be a problem. If extra materials could be shared, it would be more useful (St.15)

I don't have any problems (St.16)

We can share a lot of information easily and fast. If you use it in a right way, it is very beneficial (St.17)

Facebook application is beneficial because we can download our assignments there if we miss the class. Sometimes there are a lot of materials shared by the teacher and it disturbs a little (St.18)

Materials shared in Facebook group helps active classroom teaching because students have to do the activities assigned in group page (St.19)

I think our Facebook group makes following the lesson easy, enables us to see the announcements on time and improves interaction between students and teachers (St. 20)

5. Conclusion and Implications

This study tried to reveal the perceptions of B2 level EFL students on the educational use of Facebook. Students were given a questionnaire to explore their perceptions regarding student-student, student-teacher and student-content interaction. This case study sheds light on using Facebook for educational purposes

although it was carried out with only one group of B2 level EFL learners. The results of the study cannot be generalized and statistical analysis could not be carried out with 20 students.

This study showed that students helped each other and shared materials. Their interaction with one another improved. This finding has support in literature. Lockyer and Patterson (2008) have also revealed similar findings by carrying out a master course in a Social Networking Site and found high interaction among students. Supporting traditional education with a Facebook group, Baran (2010) found that half of the students in his study think that Facebook helps them know their classmates better. It can also be said that Facebook may help silent students interact with their classmates. Supporting classroom studies with activities, assignments and shared materials may have made the lesson more interesting for the students.

As this case study shows, Facebook can be integrated in the curriculum to support classroom teaching in foreign language education since it is the most widely used Social Networking Site. By appealing to students' lives and providing rich content, Facebook can help them learn a language efficiently. It can help students who cannot express themselves well in class. Moreover, students and teachers can interact via Facebook and they can improve their relationship with one another.

Teachers and educators may tap Facebook into their existing curriculum since these methods of community building (online social networks) are the ways in which students today are meeting, communicating, and building community (Shier 2005).

Baran and Cagiltay (2010) observe that the number of students' messages, extent of their reading of each others' messages and the frequency of their examining links in depth, etc. are directly related to the students' intrinsic motivations, so students need to be so motivated that they voluntarily involve themselves in the educational applications of these services.

Berg et. al (2007) described how campus services in higher education could be better connected to student needs, suggesting that the academic performance will be supported if student needs out of the classroom are better addressed. The issue of "student engagement" was addressed by Heiberger & Harper (2008), suggesting the use of Facebook in connecting the student with peers as well as the school environment. Facebook may be just the tool teachers need to stimulate collaborative student-led learning.

As Baran (2010) states in cultures and contexts that uphold traditional social and educational values, as in Turkish higher education, because of their longstanding experience with conventional education, students and teachers will expect certain patterns of behaviour in the classroom and the students will still wish to experience the knowledge, experience and authority of the teacher, whether face-to-face or online. Therefore, if the aim of using tools such as Facebook was to contribute to altering the patterns of teaching and learning, time and attention need to be given to defining and encouraging the new, different roles of the learners and teachers and the kinds of communications and collaborations expected.

Higher education administrators, faculty and staff have an opportunity to help students use Facebook in ways that are beneficial to their engagement, and by extension, to their overall academic experience. Given that Facebook continues to be popular among college students, and that universities are interested in engaging and retaining students, it is important for those working in higher education to familiarize themselves with Facebook and to design and support interventions that meet students where they are–in order to help them get to where they are going (Junco, 2012).

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Social Media for Informal Minority Language Learning: Exploring Welsh Learners' Practices

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Abstract: Conole and Alevizou's social media typology (Conole and Alevizou, 2010) includes amongst its ten categories media sharing; conversational arenas and chat; social networking and blogging. These are all media with which language learners are increasingly engaging. Social networking tools, in particular, which encourage informal, social communication have been identified as suitable for supporting language learning, and their use is growing quickly. This paper reviews research on using social media for informal language learning. It will then discuss a small qualitative case study of Welsh learners' practices in using such resources. Welsh is a minority UK language spoken by around a fifth of the population of Wales. Unlike a majority language there is no **need** for English speakers in Wales to learn Welsh in order to communicate with Welsh speakers as all UK Welsh speakers are bilingual. Nevertheless there is great interest among adults in Wales and from Welsh families across the UK in learning Welsh. However there are two particular challenges: the small numbers of speakers (around 611,000), and their very uneven distribution. These two factors make it difficult for learners outside Welsh speaking "hotspots" to hear and practice Welsh. Social media has the potential to support Welsh language learning by providing resources wherever the learner is (particularly if they live in a non-Welsh speaking area) and by supporting web-based learning communities. The study reported here is concerned with the extent to which this potential is being exploited in practice. It employed interviews and a small survey to study the practices of learners at all stages of their language learning. It was found that whilst all learners made some use of social media, their use varied considerably with beginner language learners tending to focus on media sharing and finding resources whilst some advanced learners used social media to support other learners: setting up practice groups, leading sub-communities and sourcing and providing resources both on- and off-line.

Keywords: Social media; minority language learning; informal language learning, Welsh

1. Introduction

This paper considers the argument for using social media to support informal language learning practices, focusing on a case study of Welsh, a minority UK language. It reviews the use of social media to support informal language learning, and to support Welsh. It then reports on a small case study of learners' practices using digital resources for learning Welsh, focusing on their use of social media. Wales has 3 million residents: 4.8% of the UK population. The Welsh language is a spoken by around a fifth of the Welsh population, approximately 611,000 speakers, and so is a minority language. For some learners Welsh may be a heritage language spoken by previous family generations, in which case, they have some familiarity with it, and their identification with the language and culture can result in high motivation. Although it is not necessary for English speakers to learn Welsh in order to communicate as UK Welsh speakers are Welsh/English bilingual, there are good reasons for learning Welsh, including the benefits of having a second language for further language learning. However, with a small number of speakers who are widely distributed it can be difficult for learners to hear and practice Welsh.

It is suggested therefore that social media can support learning Welsh by providing resources wherever the learner is (especially if they are in a non-Welsh speaking area) and in supporting web-based learning communities. The study reported in section 4 is concerned with whether and how social media is used. Conole and Alevizou's (2010) social media typology is helpful in considering learners' use of social media; including in its categories media sharing; conversational arenas and chat; social networking and blogging: all media that language learners are increasingly engaging with (Lamy and Zourou, 2013). Social networking tools, in particular, which encourage informal, social communication have been identified as suitable for supporting language learning, and their use is growing quickly.

1.1 Terms and Definitions and Social Media for Learning Languages

In social media different terms are sometimes used interchangeably. Zourou's review on social media for language learning (Zorou 2012) provides a helpful discussion of such terms. She cautions that social media in general consists of a set of tools, used differently in particular applications, whilst "Web 2.0" refers to the

platform, not the tools. She considers three terms in relation to language learning: social media, social network sites and language learning communities.

1.1.1 Social Media

Conole and Alevizou's social media typology (2010) includes 10 categories where the most important for language learning are likely to be**: media sharing** for downloading and uploading different media objects to the Internet**; instant messaging, conversational arenas and chat** where users can 'post' their contributions to a topic-centred exchange as well as texting, skyping and so on**; social network** sites (SNS) such as Facebook, with facilities for posting profiles and allowing rich communications **and blogging** where a number of web services offer users space and tools to launch their own 'blog'. So, in this typology, Social Network Sites are one particular category of Social Media.

Table 1: Types of social media relevant to language learning – adapted from Conole and Alevizou's typology (2010)

Social media for language learning	Media sharing	Instant messaging, Conversational arenas and chat	Social networking	Blogging and Microblogging
Example	Peer to peer; link sharing; e.g. Spotify TuneIn radio, Flickr, Youtube Instagram	Paltalk, Oovoo, Skype	Facebook, LinkedIn, Ning	Wordpress BlogSpot Twitter

1.1.2 Language Learning Communities

The third term considered by Zourou (2012, op. cit.) is Web 2.0 language learning communities. Structured spaces such as busuu, Babbel and Livemocha typically include language lessons as well as support for communities of learners. Zourou notes that such language learning communities have Web 2.0 technical features but are quite diverse in nature. Most provide feedback on language learning and some provide peer feedback. For example busuu connects speakers of different native languages and encourages them to provide feedback to each other: an English native speaker will be invited to provide feedback on exercises from an English learner.

Few language learning communities include learning Welsh, but one community, SSIW (Say Something In Welsh) is particularly successful, with 30,000 participants having signed up for courses. It includes:

- Two online courses (so far) with conversation-based lessons
- A forum
- A weekly newsletter
- An online Eisteddfod (a Welsh festival of literature, music and performance)
- "Bootcamps" where learners meet up face to face for intensive speaking practice
- Local meetings

SSIW is a hybrid online/offline language course and community. As learners are largely based in one country, face to face meet-ups and "Bootcamps" (intensive language learning weeks) are arranged. The combination of online and offline opportunities offers:
1. A means of socialising into a new community.
2. Communication with a wide range of peers (who may be widely distributed)
3. Speaking practice in authentic real life situations

2. Language Learners' Use of Social Media

Trosset (who studied Welsh learners) pre-empted the current consensus on the social nature of language learning: "No one speaks a language in isolation from other people; to learn a language is to enter a community of people who speak it. There are many aspects of language learning that exist not in the cognitive processes of learners, but in the social relationships developed between the learners and the members of the speech community which they seek to enter." (Trosset, 1986: 165.)

This is particularly true in our contemporary world of social media, and the desire to enter the 'speech community' which Trosset refers to above is closely related to identity. Gaved et al. (2012) note the struggle of immigrant language learners trying to acquire the common words and phrases that they need to communicate in their target language, as well as trying to express their personal selves and develop relationships with target language speakers.. They refer to Harder's work (1980) on the "reduced personality" of the second language learner whose linguistic repertoire is limited, and to the negotiation of identity that is required. In social networks expressing one's identity, developing an on-line identity and maintaining it through engaging in discussions with others is central.

Examples of structured Web 2.0 language communities Zorou (2012) include Livemocha, Busuu and Babbel, see section 1.1.2. Research into such communities has started, but is not yet well developed. A number of studies have focused on the Livemocha language community with varied findings. For example, Zourou and Loiseau (2013)'s study of the Culture section of Livemocha, found that this was not very successful as an interactive space. In an earlier study, Stevenson and Liu (2010) found, perhaps not surprisingly, that providing a way for users to reach their learning goals was rated positively by users. They also found that, unlike SNS such as Facebook, users of Livemocha were establishing new networks for the sole purpose of language learning. Two particular foci emerged from the empirical work on language social networks in Lamy and Zourou's collection: identity and community building.

3. A Case Study on Using Digital Resources for Informal Welsh Learning

Although there may be potential advantages for learners in using social media, there is a paucity of empirical studies to confirm whether such potential is being realized. This project therefore aimed to research the use of digital technologies including social media for supporting Welsh language learning, with an emphasis on informal learning, through investigating existing practices.

The research questions were:
1   What use is made of digital technologies and resources to support informal Welsh language learning?
2   How do learners use such resources to support their learning?

3.1 Methods and Participants

The study employed interviews and a small survey to study the practices of learners at all stages of their language learning. Interviews were chosen as the research question is intended to uncover practices and thus needed a method allowing exploration of such practices. The interview schedules were partly based on Kukulska-Hulme's research (Kukulska-Hulme, 2012) on using mobile devices for informal language learning in order to be able to compare data. Participants filled in a small survey to provide some information on their background and language learning experience and expertise.

Initially, the author asked for volunteer participants at the [Welsh National Eisteddfod,](#) a Welsh Arts festival. The Eisteddfod includes a 'Learners' Area' where the author was giving a short talk on the role of blogs in learning Welsh. Further potential participants were obtained via contacts who were teaching Welsh and via two Facebook groups on learning Welsh. Twelve participants took part, and interviews were held either face to face, or more frequently by phone. They lasted from around 40 to 90 minutes.

3.1.1 Analysis Approach

The interviews asked participants about their use of digital devices and technologies more generally to support their Welsh learning. Regarding social media, four categories of social media with the potential to support language learning were identified from Conole and Alevizou's typology. These are: Media sharing; Instant messaging, Conversational arenas and chat, social networks and blogging. Interview transcripts were scrutinized for examples of use of these social media. Additionally, as participants mentioned the Language Learning Community SSIW, described in section 1.1.2, use of this site was also considered.

3.2 Results: Illustrations Of Different Social Media Use

Table 2 shows the use made of each of these by the 12 participants. The second column shows their language experience, where learners categorized themselves as beginner, intermediate or experienced. A number of mini case studies or portraits then illustrate how different participants used these media.

Table 2: Use of different types of social media by the participants

Participant	Exp	Media sharing	Instant messaging Conversational arenas and chat	SNS	Blogging Micro-blogging	SSIW
1 Paul	E	✓		✓	✓	
2 Ros	E			✓	✓	✓
3 Mat	B			✓	✓	
4 Jane	I		✓			
5 June	B/I	✓				
6 Carol	I		✓	✓		✓
7 Jim	E	✓		✓	✓	✓
8 Ian	E	✓	✓	✓	✓	
9 Ann	B/I	✓		✓		
10 Jean	B	✓		✓	✓	✓
11 Sally	B	✓	✓	✓	✓	✓
12 Sam	I	✓		✓	✓	

Table 2 shows that all participants use social media for learning Welsh but what they use and how it is used varies considerably. Below, their use of each of the categories in Table 2 is discussed, followed by 5 portraits each illustrating how one particular learner uses this type of social media.

3.2.1 Media Sharing

Most participants take advantage of media sharing. Beginners and intermediate learners talk about watching programmes from the Welsh channel S4C – which are nearly all available for viewing again via the website, or via an app. One programme, "Hwb" (meaning "boost") is specifically for Welsh learners. Jean, Sally, Sam and Ann all mention watching and enjoying Hwb whilst Jane enjoys watching children's television in Welsh with her grandchildren.

Portrait 1: Ann

Ann has a desktop computer and an iPad. She downloads music, uses Facebook and watches YouTube videos. She uses her iPad for Facebook and watching television, and playing games with her granddaughter. For her Welsh learning she has accessed specific learning resources available free from the BBC (British Broadcasting Company) website:

I found a website - BBC website and I started doing some off of that …um…Big Welsh Challenge? and then Catch Phrase … I thought it would be quite nice for my grand-daughter to hear a bit of Welsh so we looked up some children's programmes and I found that really quite good because it was slower and used simpler language with lots of pictures and it was easier to understand and … then I found Cyw   (children's television)…. I watch them with my grand daughter , my grandson as well now

She has access to Welsh TV programmes via the app "[Clic](#)" - *"so you can get it whenever you want"* but notes the disadvantage for learners of there being no subtitles available – whereas when watching via the website these are available. More recently she has found that as her understanding of Welsh increases she is able to broaden the range of programmes she watches:

I have started to listen to a few discussion programmes. I listened to one last night and that's quite interesting I actually understood a little bit, they were talking about weight loss and I could understand that.

3.2.2 Instant Messaging, Conversational Arenas and Chat

Many participants write in Welsh and some use Web 2.0 tools to support this. For example, Matt, who uses SSIW, covering only spoken Welsh, also wants to read and write Welsh: *I do email a friend in Welsh. I use Google translate, and then you learn something. People write back and that extends your vocabulary.*
Although they are beginners, Ann and Jean send Welsh emails to friends. Sam makes limited use of Twitter in Welsh, whilst John completes a daily exercise set by SSIW:

On Twitter I do the daily welsh word, where you know, they pick a random word and you … have to use it in context. In Skype, some experienced learners use the text channel to help others: *Another great feature of*

Skype – and Google hangout is you can use the texting feature to type in the English if someone is struggling with the Welsh.

Not all conversations are in Welsh: on the SSIW forums learners discuss issues and share their experience of learning welsh and so communicate in English.

Portrait 2: Paul

Paul is an experienced learner, makes extensive use of technology to support using Welsh as much as possible and also teaches Welsh once a week.   He strongly believes in the importance of using technology in and for the language – and is one of the few participants who has created resources (digital flash cards available on iTunesU). He reads Welsh blogs but does not write them.

Having recently acquired a new Smartphone he is: "*still looking for ways to use [the phone] through the Welsh medium. If texting I use Welsh but there is not much available. There is a small extent to which we can use Welsh in Google but I'm struggling to find Welsh applications so largely it's a matter of texting and Facebook (available in Welsh). On my desktop I have windows in Welsh, and I have a Mac laptop and a Smartphone. I use Welsh whenever I can: it's a good way of broadening vocabulary.*

It is important that the Welsh language has a place in the development of new technologies. If [it] is seen as relevant to new technologies this will be important especially that young people have the opportunity to use Welsh when they are using new technologies…or Smart Phones.

He uses technological resources to support his Welsh writing (which has a different character set from English). There are also Welsh versions of a number of tools including Google (Gwgl), Facebook and Twitter which he uses.   He explains:

The (Cysgliad) software includes a dictionary (Cysgair) and also a proof reading tool (Cysyllt). It is stand alone and can be used with a variety of applications so I use it if sending an email in Welsh.

 He makes some use of Facebook and also uses Twitter and through these has connected to Welsh speakers who discuss aspects of the language:

I use the Welsh version (of Facebook) and I use Twitter. I have friends and colleagues who use it. On twitter I have found Ein Cymraeg, a group of Welsh speakers, many of them teachers, who discuss grammatical issues and word origins in the Welsh language.

3.2.3   Social Network Sites

Ten of the participants use social networking – Facebook – in their everyday lives.   For Welsh learning their use varies considerably. So for example Karen is very wary about using Facebook in general:

 I am a bit worried about putting personal stuff out there. You know people emote say about their nervous breakdowns, and I think, you know millions of people are reading this.

However, she does use Facebook to communicate in Welsh with her cousins:

 …my cousins are bilingual of course because they grew up, you know, in Machynlleth … and we are friends on Facebook so they will post up messages in Welsh on my wall … and then you know I have to get my dictionary out

Whilst users like Karen use the standard English Facebook, some more experienced learners use the Welsh version and have found ways to support their spelling across several different applications. For example Ros (see portrait 4) comments:

I've put the Facebook page into Welsh so the spell checker works on that. If I used Facebook when I was writing my blog that would pick up the spellchecker on the computer, whereas if I used Internet Explorer I would have

to run it in Microsoft word to make sure I was spelling everything correctly and then paste it in, whereas if I opened the blog up in FireFox it would use the Microsoft spellchecker which is really odd .

Two learners do not use Facebook (the only SNS mentioned). One, living outside the UK, might be regarded as an ideal candidate for using SNS but does not currently have a Facebook account. Another participant who does not use SNS for Welsh is Jane, an intermediate level learner who tries to use Welsh whenever she can. As she has Welsh classes three days a week, a Welsh school nearby, and a very active Welsh local community she probably does not need to use online sites.

Portrait 3: Jim

The most active Facebook user for supporting Welsh learning is Jim, who lives in England. Jim is now a fluent Welsh speaker and very active in supporting Welsh learning and learners. He is a proficient and creative IT user, and has been involved in informal activities organized by various organizations for about ten years. He started a local Welsh learning group in his home town (in England) ten years ago, and now runs two local Welsh groups with activities such as monthly Welsh language workshops, regular classes, coffee mornings and occasional scrabble competitions. He has set up Facebook pages for these groups where he advertises events, shares resources and publishes the local (Welsh) newsletter and a Facebook group on learning Welsh in England. One use of social media for him therefore is to support his organization of these groups.

These Facebook pages provide an online presence for the Welsh groups; advertise events, provide useful resources for learners and generally provide information and support for learning Welsh in England. Partly through this network (and also through SSIW) learners from other areas have joined and created their own groups:

Through the publicity and through SSIW we have attracted learners from Manchester, Sheffield and of course Jim Monk from Norwich. Now there is also a group in Solihull and Leeds.

Half of the members found the group through the website – so it would not be viable without it.

3.2.4   Blogs and Microblogging

There are few active bloggers, although Paul reads Welsh BBC and political blogs and finds them helpful.   Jim (Portrait 3) also writes a Welsh blog, and blogging plays an important role for some more experienced learners.

Portrait 4: Ros

Ros is a very experienced Welsh learner who is now also teaching Welsh and enjoys using technology. She started her blog in July 2008 and last posted in October 2011 when she started training to teach and had written 148 posts and 40,000 words.

Her first blog post says: (author's translation)

At last I have enough time to write a blog. After spending three years taking assessed courses at the local college I've decided enough is enough. I've had a bellyful of exams, although to be honest I have learnt a lot over the last three years and don't regret one day.

Later she comments– *After spending hours reading other people's blogs (including one from my friend Emma Rogers) I felt the time had arrived for me to start writing one.*

She blogs in Welsh and whilst many of her posts concern her "Welsh" life, such as being on the learners' committee for the Eisteddfod she also writes more broadly about everyday life. The 'social' in social media is particularly important; for her learning Welsh has led to a new social life:

It's opened up a complete social life, because we live in a small village, and the village community to some extent has disappeared, and there is no village life as such.

Her connections and network are partly online and partly offline – so, for example she refers to knowing Ned, another blogger:

I spoke to him about the blog a few weeks ago … and he says he just doesn't have time for his blog. … I met Ned through the blog too. And then we met up with a group of other people at the Eisteddfod in the Bala and we just keep in contact – on Facebook – you know I have other welsh friends on Facebook and we keep in touch … for me it has opened up a whole community. There is an online community

Her off-line use mirrors her on-line use in that she has created opportunities for learners to interact with each other:

When we started there was just the course and nothing else to do. Now there are loads of things to do. Chat sessions, revision sessions in the summer, different activities to have a go at like games in Welsh and quizzes and things like that.

Ros teaches Welsh and helps other learners - but this is mainly face to face. Learning Welsh has been a very social experience for her and has led to a social life - both on and off line.

3.2.5   Language Community Sites: SSIW

Seven participants use SSIW, the "Say Something In Welsh" language community site and course; five for learning Welsh and two for their teaching and to support learners. Those learning (and teaching) with SSIW are very enthusiastic. Ian had taught himself Welsh and read old books written in a style of formal Welsh which is not used by contemporary Welsh speakers and so the SSIW lessons help his conversational Welsh and pronounciation. Two participants do all their Welsh learning through the course and one is now actively planning to attend a bootcamp.

Portrait 5 Matt

Matt is a beginner who is very competent with technology and whose family come from Wales, so Welsh is a heritage language for him. He found the SSIW course whilst in Wales:

… I saw the course Say Something In Welsh, which is influenced by Michelle Thomas's approach… I was in [North Wales] a year ago for a week on my own, and I downloaded it whilst I was there. I found a centre that supported Welsh activities and provided cultural opportunities and went into a drop-in class.

He uses spare or 'dead' time to listen to and practice Welsh:

I am using SSIW mainly on the smartphone. That is my preferred activity when driving and so if I am driving I am looking forward to getting a booster. Before bed is also a good time.

I have used it on a train – where I will talk under my breath… or whilst I am walking.

For him, access to such online course on a mobile device, has been key:

Without it, it would still be something I want to do one day. Finding SSIW was fantastic; that week was brilliant. I went to a beginners' class, I was a bit out of my depth but I enjoyed myself. Also I went to a bookshop and someone asked me something in Welsh, and I was able to say "I can't speak Welsh".

4. Discussion and Conclusions

All participants use social media to support their learning, but what they use and how they use it varies considerably. At the "low use" end, learners use sharing facilities to watch Welsh television programmes or films, video on YouTube or to download music, and use free resources such as those provided on the BBC website.
Some experienced learners are intensive and creative users of social media. One such learner uses Facebook (the only SNS mentioned by participants) to develop and sustain communities of Welsh learners. Some

experienced learners also blog in Welsh, to practice their Welsh and reflect on their learning – and teaching in one case. The Facebook group sites set up for local groups in England and for Welsh learners in England overall, have been successful in connecting together geographically dispersed learners as suggested in the introduction. Although some Welsh is used in these groups, much of the text is English so as to be accessible to beginners. Hence, such sites do not support language practice, although learners who have met each other through such sites can then contact each other and practice their speaking, sometimes online.

There is little evidence of activity being mainly or only online.   Rather, participants gave accounts of both online activities and networks, and meeting up with other learners. This mix works well – especially where online sites serve to connect learners either face to face or online.

The one Welsh language community site and course, SSIW, is popular and seems likely to have an impact on Welsh language learning. Interestingly this is also a blended community, offering local meetings for practice, and an online "Eisteddfod" where learners compete in the areas of poetry and music amongst others.

To summarise and conclude, having suggested that social media might help to address some challenges of learning Welsh, this paper has reported on a small study that investigated learners' social media practices. The study found that most learners use tools for sharing media and resources, for chatting and interacting with other learners, social networks and microblogging. Which social media they used and how, varied, so for example only the more experienced learners blogged, although a number used twitter, chat or email.

This small study has revealed some of the social media practices amongst informal Welsh learners. The participants described themselves as learners, but some are now so proficient that it could be argued that they do not represent learners in general, hence future research could focus on beginner and intermediate learners. However, these experienced learners – some of whom now also teach – revealed creative uses of social media to both develop their own learning and to support and connect learners.
Such practices are likely to be relevant to other language learning, particularly minority languages with small populations of speakers who may also be geographically dispersed and could provide useful guides for learners and teachers.

Acknowledgments

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Students Perspectives on the Reliability of Academic Information Sharing Via Facebook Groups

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Abstract: This paper attempts to raise a discussion regarding the social media sharing information reliability, focusing specifically on Facebook. Smith & Kidder (2010) suggest that Facebook is so popular because it revolves the sense of community and especially for the young users, the sense of identity. Regarding the former, Reich (2010) argues that research on the Psychological Sense of Community has identified four core components which help capture how individuals feel towards their community, namely: a) membership, b) influence, c) integration and fulfillment, and d) shared emotional connection. Although social networks' resemble online communities, it seems that the users support networked individualism but these individualistic uses can be tools for supporting sub-communities, within the social networks (e.g. by participating in various groups, based on personal preferences) (Reich, 2010). Facebook was initially designed for social interaction. However, purely academic exploitation of Facebook can be seen, especially in tertiary education. A research conducted in the South African University focused on the *academic groups* Facebook application, utilizing it for teaching and learning (Bosch, 2009). Findings indicated that both teachers and students highlighted benefits concerning the use of Facebook Groups for academic reasons. Several universities have their own Facebook Group accounts created either formally through university or informally via the students' community. The university secretariats are responsible for announcements, news feedback and information provision, regarding the departments and the courses. Occasionally, announcements are incomplete or posted late. Consequently, students are misinformed or not informed at all about events, grades, department's news or replacement courses. In order to overcome this barrier, many students have created special interest groups on Facebook named after their university department. Kandroudi and Bratitsis (2013) refer to a typical Facebook Group example. The name of the Group is "School of Philosophy- Department of the Italian Language" which was created exclusively by students. An interesting aspect is that access to the department staff members is strictly forbidden. The majority of the posts in the group concern organizational issues, but the group operation is partially also academic and social. All the group members can post announcements and information regarding the department. The information, announcements and news feedback are updated immediately. Similarly, there are a lot of groups created by students to replace the secretariat. Even when the department has its own page, the students consider that a group created by them has immediate replies, is more friendly and non-official. However, the main disadvantage of a group like this is that students many times cannot distinguish the fake information and as a result they receive inaccurate announcements regarding the courses or the teachers. This paper will present a research in the progress of Facebook Educational Group's sharing information reliability. A total of 107 participants completed a questionnaire in order to make clear the existing Facebook group's interaction among academic staff and students. The aim of the paper is to present the students' beliefs concerning the reliability of social media sharing information.

Keywords: Facebook, reliability, students' beliefs, academic information

1. Introduction

Facebook is a social network site aiming at friends, family or business connections. Although initially it was designed for social purposes, nowadays it has many other uses including academic and educational. According to the statistics, Facebook has 250,934,000 users in Europe and about a billion users (975,943,960) all over the world by the end of 2012 (http://www.internetworldstats.com/stats4.htm). Smith & Kidder (2010) argue about Facebook's popularity since it revolves the sense of community and especially for the young users, the sense of identity. Regarding the former, Reich (2010) argues that the research on Psychological Sense of Community has identified four core components which help capture how individuals feel towards their community, namely: a) membership, b) influence, c) integration and fulfillment, and d) shared emotional connection. Although SNSs resemble online communities, it seems that the users support networked individualism but these individualistic uses can be tools for supporting sub-communities, within the social networks (e.g. by participating in various groups, based on personal preferences) (Reich, 2010).

Selwyn (2009) agrees that students use Facebook in order to develop social relationships with their colleagues at the university but also at the lower level academic institutes. The findings of this research indicate: a) the importance of Facebook as a social tool for facilitating students' settling in progress at the university, b) that Facebook is one of the practices that could keep the students' community together and enhance their communication, and c) that according to the students Facebook is a social and not a formal learning tool.

However, nowadays, an increasingly academic exploitation of Facebook can be seen, especially in tertiary education. Both students and teachers independently and academic schools officially create groups on Facebook to share educational or other information.

Although social networks demonstrate their importance, an issue about sharing information reliability is arising. Researchers (Flanagin & Metzger, 2000) indicate that the growth of internet results many times in inaccurate, biased or misleading information. Accordingly, several times in Facebook groups' unreliable information are shared, causing confusion to the users. This paper attempts to raise a discussion about students' beliefs concerning the reliability of social media sharing information, Facebook in particular. A research conducted in tertiary education is presented. The paper is structured as follows: initially the existed Facebook research approaches focused on its academic exploitation is presented. The current research approach is pointed out. Afterwards, the research methodology and the research findings occur. Finally, the future works and the limitations of this research approach are discussed.

2. State of the art

This section of the paper presents existing Facebook research approaches, focused on its academic exploitation.

Bosch (2009) conducted a research in the South African University, focusing on the *academic groups* Facebook application, utilizing it for teaching and learning. The results point out that both teachers and students highlighted benefits concerning the use of Facebook Groups for academic reasons. Specifically, the students indicated that: a) Facebook friends helped them to identify and locate learning material, b) Facebook was important during vacations for connecting with their colleagues and discuss about projects or share lectures and study notes, and c) via Facebook they were able to contact tutors and lecturers for academic information in an informal environment. Teachers noted that (Bosch, 2009): a) Facebook allowed students to ask questions they might not feel comfortable to ask in class, b) in class time was spent effectively because queries had already been solved via Facebook, and c) students indicated through the Facebook group areas of the learning material which they found interesting and thus the lecturers came in class better prepared.

Mazer, Murphy, & Simonds (2009) demonstrated that university teachers, who exploited Facebook in order to approach the students through self-disclosure, affected their motivation for participating in the educational process and learn. Although many teachers had personal websites they proposed that Facebook was more effective, simple to use, and it seemed to enhance teacher's relational interchanges with students, being a highly interactive tool, as opposed to a more static website.

Pelizzari (2012) considers Facebook as a supporting learning platform. He conducted a research regarding students' academic performance. Findings indicated that more active users gained higher scores. However, this could not be generalized, as students with higher scores have the tendency to be more active. Barnes et al. (2007), report about a professor who taught concepts of social networks to foster critical thinking. They argue about online habits incorporation of the 'Net Generation' by teachers in order to teach them how to learn, thus enhancing their metacognitive skills.

Coclar (2012) conducted a research concerning students' perceptions of Facebook as an educational environment. A group about science history was created and data were collected via interviews. Students indicated as advantages the dissemination of information (26.1%), motivation (17.4%), interaction (13%) and entertainment within education (10.1%). Regarding disadvantages, students indicated that education was offered nested with entertainment (26.1%) and that they doubted the validity of the information (21.7%). However, students made suggestions about using Facebook as a learning platform, with 24.5% of them supporting that teacher's supervision should be increased, 18.4% believing that comments should be encouraged and 12.2% suggesting that teacher-student interaction should be increased.

Cain & Policastri (2011) support that a Facebook group page may be an informal learning environment, providing contemporary learning approaches. A research by Grosseck et al. (2011) revealed that for some students, Facebook represents a better learning environment than that the one provided by schools. Moreover, 57.3% of the students preferred to receive assignments via Facebook, 30% of them indicated that through Facebook's environment they felt motivated and comfortable to fulfill academic assignments and 22.9% that Facebook groups are useful for education.

As far as the several uses of Facebook are concerned, Kandroudi and Bratitsis (2013) categorized different uses of Facebook, presented in literature. Specifically they indicated the categories of *social use*, *academic use* and *other uses*. Table 1 summarizes the aforementioned categorization. Each cell in this table corresponds in a research approach from the literature. They present a literature overview of the research approaches concerning educational uses of Facebook in the corresponding paper (Kandroudi & Bratitsis, 2013).

Table 1: Categorization of Facebook use in education

Social use	Academic use	Other uses
Undergraduates use Facebook to initiate and develop social relationships in three dimensions, initiating, maintaining, social information-seeking ((Ellison, Steinfield, & Lampe, 2011))	Facebook, as an online environment for learning English at University (Kabilan, Ahmad, & Abidin, 2010).	Announcements about course grades, replacement and statements courses, scholarships, seminars
A research of first year university students investigate the ways they used Facebook for social reasons in their academic life prior to commencing university (Madge, Meek, Wellens, & Hooley, 2009).	Facebook as a supporting learning platform for a course in mathematics in undergraduate students (Pelizzari, 2012).	Information about postgraduate studies, legislation, jobs.
Crucial identity role. Photos, movies and videos in Facebook help students to express their identity (Pempek, Yermolayeva, & Calvert, 2009).	SNS could give an advantage in building a community of learners. Facebook group application could benefit language acquisition and interaction (Blattner, 2009).	File sharing (articles, past papers and course notes)
Facebook is so popular because it revolves the sense of community and the sense of identity (Smith & Kidder, 2010).	Facebook group page as an informal learning environment providing contemporary learning issues (Cain & Policastri, 2011).	Secretariat's abolishment
Users support networked individualism but these individual uses of SNS may be tools for supporting other communities (Reich, 2010).	A professor teaches concepts of social networks to foster critical thinking (Barnes, Marateo, & Ferris, 2007).	Communication among younger & older students for course related information
	Students agree that Facebook group application could be a successful Learning Management System (Wang, Woo, Quek, Yang, & Liu, 2012).	Increased online reputation, as opposed to real life
	For some students Facebook represents a much more learning environment than that provided by schools with 57.3% of them prefer to receive assignments via Facebook (Grosseck, Bran, & Tiru, 2011).	
	A research indicated that both teachers and students mentioned benefits concerning the use of Facebook Groups for academic reasons (Bosch, 2009).	
	Facebook as learning platform in order to perform academic issues (Wong, Kwan, Leung, & Wang, 2012).	

3. Research Approach

The secretariat staff of a university is responsible for announcements, news feedback and information provision, regarding the department and the courses. Occasionally, announcements are incomplete and/or posted late. Consequently, there is a misinformation or not information at all of students regarding events, grades, department's news or replacement courses. In order for this obstacle to be overcome, many students have created special interest groups on Facebook named after their university department.

Kandroudi and Bratitsis (2013) indicate a typical example of a Facebook group created for academic purposes exclusively by students. The name of the Group is "School of Philosophy- Department of the Italian Language". It is a closed group and in order to join it, the individual has to be student of the corresponding department. An interesting aspect is that access to the department staff members is strictly forbidden. Organizational issues cover the majority of the group posts, but the group operation is both academic and social. All the group members can post announcements and information regarding the department. Posts irrelevant to the department and the education process are strictly forbidden. Specifically, the announcements concern grades of the courses' replacement and enrollment, scholarships, seminars, information about postgraduate studies, legislation, educational or linguistic career opportunities. Moreover, students also upload articles, past papers and notes for the courses using the tab "files". Students find this very helpful since all the course material is concentrated in a single web page. The main benefit of this group pursuant to the users is the secretariat's abolishment. The information, announcements and news feedback are updated immediately. The users reply directly and instantly to everyone who has questions regarding the department. An effective communication

between the younger students and the older students takes place, having as a result information acquisition regarding courses. According to a student, "*the willingness of the majority of the users to help each other is impressive*". Another important issue, according to a student is that some group members have the opportunity to become famous through the Facebook group, as opposed to real life. Even though in real life they do not know each other, by communicating via the group many members are well-known among their co-students as writers of many important Wall posts considering various issues. Moreover, such social contacts deriving from communication and interaction that take part in the group may often result in real life friendships. However, the main disadvantage of groups like this is the fact that students usually fail to distinguish the fake information and as a result they receive inaccurate announcements regarding various group matters.

Similarly, there are a lot of groups created by students to replace the secretariat. Even when the department has its own page, the students consider that a group created by them has immediate replies.

a)   Research methodology

This paper presents a research regarding the credibility of Facebook's academic sharing information. The research has taken place at the University of Western Macedonia in Greece from November 2013 until March 2014. So far, 107 (15 male and 92 female) undergraduate students from 6 different academic departments have participated the investigation by filling online questionnaires. The majority of the students (67 students) were in the first academic year.

A combination of quantitative and qualitative approaches was used to interpret the data. The open-ended questions were coded and classified, whereas the closed questions were analyzed with the SPSS program.

4. Research Findings

The results reveal that the 91.6 % of the students own a Facebook account. Regarding other social media accounts, the students also owned one in Twitter (13.1%), Skype (66.4%), YouTube (84.1%), Pinterest (7.5%) and LinkedIn (5.6%). As far as the academic departments are concerned, about half of them own an official Facebook page, whereas all the departments own Facebook groups created by students. Furthermore, students stated that they used the university's official email service(85% of them) and courses operational systems(92.5% of them). This indicates that students are ICT efficient users.

Hereinafter, the students' operated group will be addressed as SFG (Students' Facebook Group) and the department's official group as OFG (Official Facebook Group). As much information is also published on the official websites of the departments, the term OFG will include them as well, for the needs of this paper. Also, it is important to note that in all but one, the SFGs were closed groups and the students needed authorization by the group administrator, in order for their participation to be approved. Initially, the aim was to record the informational needs of the students when participating such groups in Facebook. Two multiple choice questions were used for reason, accordingly. The results reveal that, regarding the SFG, 94 students (87.85%) wanted to be informed about the courses, 69 (64.48%) to acquire information about the academic staff and 62 (57.94%) to receive updates regarding the courses' material. For the OFG, the numbers were 82 (76.63%), 71 (66.35%) and 56 (52.33%), accordingly. Table 2 summarizes the answers received for these questions.

Table 2: Variety of the acquired information

Information about:	Students' Facebook Group	Official Department's site
Work	20	16
Home	10	8
Courses	94	82
Teachers	69	71
Previous examination topics &questions	63	0
Courses' material	62	56
Time schedule of courses and exams	71	71

It seems that SFG is mostly used for acquiring information regarding the courses. An interesting observation is that the students recognize the academic role of their group and they mainly use it for educational reasons. The educational role of official department's site is a fact, but Facebook is mainly used as a social tool. Students initiatively deemed appropriate to create their group on Facebook not only to communicate but also to be informed about academic issues. Another key point regarding the academic exploitation of Facebook concerns the exams. Through SFG 63 students (58.88%) pursed information about previous examination topics and questions, obviously in an attempt to be better prepared. An interesting observation, although more or less expected, is that no such information was available through the OFG or other official resources. Moreover, students seek information about occupation and accommodation opportunities slightly more from the SFG (18.69% and 9.35% accordingly) than the OFG (14.95% and 7.47% accordingly). The same goes also for additional course material, for which the percentages are 57.94% (SFG) and 52.33% (OFG) respectively. Finally, the percentages of students who seek information about the time schedule of the courses and/or the examination period, as well as more information about the academic staff are almost equal in both cases.

When asked about the credibility of the information, the majority of the students (84.1%), considered OFG to be more reliable than SFG (23.4%). Although SFG seems be considered as not very reliable in information provision, 72% of the students highlight the fact that this group provides more immediate information. Regarding OFG, only 22.4% of the students characterize the update of information as immediate.

The participants were asked to justify their choice regarding the reliability of the provided information. The majority of the students (84.1%) reported that OFG is more reliable because the announcements derived from the university secretariat and not from students. However, there are answers were students indicated the immediate updating deficiency by OFG. Specifically, many students wrote that "the official department's site provides more reliable information instead of Facebook group where everyone could write anything. However, the Facebook group has an immediate updating". Furthermore, a student considers the students' Facebook group more reliable because "comparing with the students' group the official department's site is rarely informed".

Based on the above findings, it seems that the students are mainly informed from SFG, despite the fact that OFG is considered to be more reliable. Trying to interpret this behavior, the simpler explanation could be the immediate updating of SFG. The young students, belonging to the "net generation", are frequently connected to the internet and through cell phones and tablets almost perpetually. They use social media for direct communication, thus they usually have a continuous connection to their Facebook account. It is obvious that they read the most direct and frequently updated information of the SFG, as they are used to acquire it in a very short timely fashion. In this case, the key issue it seems to be the proper evaluation of the acquired information, taking into account that they seem to be aware that it is not always valid.

In order to get a more clear insight of the students' perceptions and to examine how biased their answers to the aforementioned questions were (by answering what they though they "should" have answered), their behavior within SFG was further investigated. They were asked what were they allowed to write on the Facebook Wall. Their answers revealed that 43% of their posting were related to social issues, 57.9% were related to general educational issues, 64.5% were related to educational issues directly connected to the department they belonged, 25.2% shared photos and 11.2% shared music (Table 3).

Table 3: Material that students were allowed to share on the Facebook Wall

Social issues	43%
General educational issues	57.9%
Educational issues connected to the department they belonged	64.5%
Photos	25.2%
Music	11.2%

Another interesting issue to examine was the participation of academic staff members in the SFGs. 46.7% of the students replied that this type of access was forbidden, 43% replied that academic staff members have access while 11 students do not answer the question. It is also interesting to note that 42.1% of the students

replied that in case the academic staff had access to their SFG, they would not have been writing in the same manner.

When asked specifically if they would prefer their department to use only (or mainly) Facebook for publishing news and announcements, instead of other means (e.g. the official website), most of the students (N=69 – 64.48%) agreed. Their justifications for this answer were that "*they are always connected to their Facebook profile*", "*this choice refers the immediate Facebook's updating*", "*the continuing access to the Facebook page*", "*the everyday and permanent connection at the Facebook page*", "*the Facebook's convenience*" and "*the fact that almost everybody owns a Facebook profile*".

On the other hand, the students were not so positively predisposed when asked if they would prefer a social network service officially provided buy their department, in which they would be able to communicate and exchange information and ideas. In the question, services such as discussion forum and blog were also mentioned, explaining that they could be used in the same manner as Facebook. Many of the students were negative on this and a worthwhile answer indicates that "*Facebook is easier because of the plethora of Facebook applications on smart phones, tablets and laptops. You could have an immediate updating through the notifications*". It is obvious that they want to continue using the service that they are familiar with (Facebook) and do not want to be forced to learn another tool, even if similar to Facebook.

Finally, in an attempt to better evaluate the reliability of the students' answers, three more questions were addressed to them. Only a few students answered these last three questions, so no percentages were calculated. The first one requested them to state *which was the most useful thing that they read on OFG*. The most popular answer was "announcements about courses" followed by "courses syllabus". The second one requested them to state *which was the most useful thing that they read on SFG*. The most popular answer was "courses cancelation" followed by "announcements regarding educational issues".

The final question was *what was the most annoying thing that you read on SFG and why was that annoying for you*? Although the majority of the students indicated that SFG is of limited reliability, only one student referred to this as being annoying. The majority of the students answered that there is nothing annoying in the SFG while there are other answers such as "political comments, advertisements, students' complains".

5. Discussion

This research aimed at examining the reliability of academic information sharing through the Students' Facebook Groups (SFG) and the Official Academic Sources (OFG). The research findings indicate that the majority of the students (84.1%) reported that the OFG is more reliable. However, the majority of the students (72%) choose to be informed through the SFGs, because they are almost immediately updated. The research presented in the current paper indicates that Social Networks could be used except from social interaction, also for academic reasons in order to facilitate educational processes. The findings of the current research support this view. The information that the students are seeking through these services are directly related to their educational "duties". On the other hand, they seem to understand that they need to be careful, as it is easy to be misinformed within a social network, in which all the participants have equal rights in sharing information.

Initially this research included 200 participants which were asked to fill in online questionnaires. Unfortunately, many of the questionnaires were not valid since the students left many fields blank. The researchers used only 107 valid questionnaires having in perspective the will to expand the research with a larger population.

Thus, among the limitations of the current research approach is the small sample, especially regarding the male participants. Also, the proportion of the departments' presence is not balanced. Finally, many students left the fields in the justification sections blank. Consequently, a second phase of research is already being designed, in which more mandatory fields will be added, avoiding many invalid questionnaires. Moreover, an attempt will be made to include participants from both genders and departments, spread all over the country in order to have a more representative sample of the student population of Greece. The questionnaire will be deployed also through Facebook, as it seems that it will reach more participants. Finally, in order to keep the proportions of departments' presence in the sample, a limit of valid questionnaires per department will be applied.

Future plans include a similar analysis of the extended set of questionnaires according to gender, department and age. For instance an interesting aspect of this research is to code answers concerning the gender combining with the department.

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Social Media in Classroom Education or Let's Transfer Education into Cyberspace

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Abstract: At present, social media are experiencing an enormous boom around the whole world. While using social media in higher education is quite common, using them in the lower levels of education, especially in elementary education, is not well established. The question arises as to what extent our educational system is capable of using the potential of such media (in what subjects, how often, for what purpose) in the classroom effectively, if at all. A questionnaire survey was created in order to find out how social media are currently used in elementary schools. The results of the survey serve as a starting point for establishing models such as the changing attitudes of the teachers, innovation in teaching, new methods and forms of pedagogical work, making lessons more attractive to the students and more. In the light of the connectivism theory, we are seeking a new perspective on education that goes beyond the individual.

Keywords: social media, media in education, (questionnaire) survey, school projects, connectivism

1. Introduction

In general, social media are equated with social networks, and for most people, including the teaching community they are represented by Facebook and are seen as entertainment. For most users of digital technology, social media are understood as places for sharing and co-creation of content in the form of text, photos, videos or games. Social media, however, include other forms and can be exploited more in other areas: in communication, in marketing and not least in education.The concept of social media is not fully established. Of the several definitions offered by Bouda (2009), the following one is the most interesting:

> …*tools, that provide easy to use collaborative workspace using various communication tools (Bush in Bouda 2009);*

or a different opinion:

> …*online media where people are talking, participating, sharing, networking, and bookmarking online (Jones 2009).*

The concept of social networking is often tied with the concept of Web 2.0.
Wikipedia (http://en.wikipedia.org/wiki/Web_2.0) provides the following definition:

> *A Web 2.0 site may allow users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community, in contrast to websites where people are limited to the passive viewing of content.*

There is a plethora of explanations for the concepts starting from Web 1.0 all the way to Web 4.0. For example Evans (2006) gives detailed explanation of their characteristics.

In general, social media can be understood as places, where:

- information is shared;
- content is co-created;
- interactive communication among user groups is taking place;
- specific content can be evaluated.

Further feature of social media also includes:

- multimediality;
- unlimited time accessibility.

There are also attempts to classify social media, for example as done by Janouch (2010):

According to focus area:

- social networks;
- business (corporate) networks;
- bookmarking systems (often with the possibility to vote on content);
- news servers.

Based on marketing tactics:

- social networks;
- blogs;
- discussion forums;
- sites with user-generated content;
- social bookmarking systems;
- multimedia sharing;
- virtual worlds.

Certainly there are numerous other criteria.

Strach (2010) addresses the impact of social networks on changes in the use of the Internet at school. He points out the possible use of social networking sites:

- in classroom education;
- in homework;
- as a tool for improving relationships between classmates;
- for communication: between parents and the school, among parents.

Strach also notes that increased awareness of all the participants (teachers, parents and especially students) and the appropriate use of social networks for school work can reduce the risks that social networks present.

2. Connectivism – Learning in the Environment of Social Networks

The ubiquity of computers and their interconnection bring changes in the means of cognition. There are new models of learning, new theories of cognition. A new concept arises:

> *connectivism – a theory and methodology of cognition, learning, interlinking of information resources and education in the environment of social networks.*

In connectivism, learning is described as a process of creating a connection between nodes of a complex network. Emphasis is placed on communication and interaction between individual members of the network. The members of the network posses different knowledge, but more important than actual knowledge is the ability to identify and recognize links between topics and issues, the ability to make decisions and the ability to change one's attitude.

Brdicka (2008) compares four concepts of learning models: behaviorism, congnitivism, constructivism and connectivism. He defines them in terms of: principle, why?, memory functions, how? and method. The following table presents his description for connectivism:

	Behav	Cognit	Construct	Connectivism
Principle	…	…	…	Understanding of information structures in the network.
Why?	…	…	…	Diversity of the network allows to find the most suitable way.
Memory functions	…	…	…	Knowledge is shaped based on dynamically changing network.
How?	…	…	…	Active participation in the network.
Method	…	…	…	Comprehensive approach using various resources.

The image of the world, the scope of the world's knowledge and ultimately vital skills for life is changing rapidly. Ways of acquiring and evaluating information are changing too. It appears that the ubiquity and interconnection of computers cause changes in personal characteristics and the processes of cognition of the "net" generation. We are preparing our students for life in an environment that we cannot even imagine. Teachers are trying to promote innovative methods of using technology compatible with connectivism. A number of examples can be found in tertiary education, for example the creation of Personal Learning Networks supported by Personal Learning Portfolio or Personal Credit Portfolio. An individual learns through them while at the same time presenting and building his/her digital identity.

New approaches to instruction focusing on the student offer new possibilities and benefits (Pitner a Motsching in Kapounova et al. 2012)

- considering goals and expectations;
- teamwork;
- project-based learning;
- contributions sharing and presentation;
- peer learning;
- interactive elements;
- communication;
- problem proposal;
- learning contracts;
- feedback;
- blended evaluation.

The situation with using social networks at lower grades in classroom education is less favorable. Yet, many dedicated teachers were able to accomplish a lot. A number of educational projects in schools using the Internet were implemented and many tutorials were invented such as WebQuest types of tutorials (Ceska skola 2013), Projects are developing in the framework of international programs like Comenius or eTwinning.

3. The Use of Social Networking Technology for Learning

The question arises how to exploit networking technologies in the classroom. Undoubtedly, other questions emerge:

- first we need to define the notion of what actually social media or social networks are;
- why should we support their use in classroom education at all – as teachers, parents and a school as an institution;
- how to begin so that we would use them effectively – choice of technologies, didactic approaches;
- it is necessary to innovate the content (maybe even concept) of ICT literacy for working with social networks;
- how to influence students so that they would not waste time by chatting and surfing inappropriate sites;
- how to motivate teachers to learn to work with other tools – they already managed to work with computers, interactive boards, mobile technologies and now there is something else again...;
- how to include activities with social networks into an already crowded curriculum.

Gradually we will seek answers to these questions. We wish to focus on elementary schools and therefore need to understand the situation at these schools – both in equipment and in the attitudes of potential users, including not only the students, but especially teachers, school management and parents.

4. Current Utilization of Social Media In Elementary School Education

For starters a survey was chosen to get a general overview (denoted as an issue 1).

- *What social media can schools currently exploit for educational purposes?*

- *Do schools have sufficient digital equipment with possible Internet access (with sufficient connection speed to the Internet)?*
- *Are Czech schools adequately prepared to teach using social media in the classroom?*

Then, schools will be selected for closer cooperation (denoted as an issue 2). This issue addresses the question whether project activities of schools have an influence on shaping a positive attitude towards the use of social media in education.

- *Do school project activities (projects using social media, such as eTwinning) have an influence on shaping a positive attitude towards the use of social media in education?*

Given the nature of this topic, the pedagogical research will be implemented through the following methods of data collection:

- questionnaire;
- interview.

Choosing a questionnaire survey for issue no. 1 seems the most appropriate. The questionnaire was presented to the school management (headmasters, deputy headmasters) of a single region through the Google Apps electronic form. The headmaster could forward it to the ICT methodologist, or to another competent person. The questionnaire contains both open-ended and closed-ended questions. Also, great emphasis was placed on the shortest possible time for completion of the questionnaire.

Based on the completed questionnaire we determine:

- usability and the current possibilities of social media in elementary schools;
- the attitudes and opinions of the school management about the new options of introducing social media into classroom education at elementary schools.

Based on the obtained responses, elementary schools that showed interest in the issue of social media in education will be asked for further cooperation. Interviews will be used for this survey (qualitative research).

4.1 Results From Other Sources

Schools regularly provide the state, i.e. the Ministry of Education, with a variety of data, many of which are commonly available in publicly accessible databases. For example, the annual reports of the Czech School Inspectorate (2013) state that:

- in the academic year 2008/2009 there was an average of 7.9 % students per computer and in the academic year 2011/2012 the ratio increased to 8.1 % students per computer – that points to a significant stagnation in the number of available computers in elementary schools;
- most computers (81 %) in the year 2011/2012 were found exclusively in computer labs;
- in elementary schools in the academic year 2012/2013 there is slight improvement because of active participation in number of projects, such as "EU Money to Schools" which allowed schools to:
  - ◦ purchase ICT equipment, such as laptops and interactive boards;
  - ◦ provide students with the opportunity to use wireless connection in more than half of the schools;
  - ◦ make use of portable devices in so-called mobile classrooms not only to teach IT courses but also other subjects like Czech, history, natural history or foreign languages.

A survey was carried out by the research agency TNS Aisa (2014). It concerned the use of mobile technologies in middle and high schools. To the question "Can a smartphone be a useful tool for teaching?" more than 40 % teachers answered negatively. We can assume that in primary schools the situation is similar, if not worse. Obviously, work in social networks does not require necessarily smatrphone or tablet.

4.2 Questionnaire Survey Results

The preliminary investigation (pilot survey) took place in January 2014 and was attended by 10 elementary schools from the Moravian-Silesian Region (Czech Republic). The schools were urban type of elementary schools mostly focused on teaching languages and sports. Each school has an average of about 380 students.

Schools' equipment:

We were interested in:

- the number of computers or notebooks that are available to the students during a class, and connectivity to the Internet;

- the possibility of wireless Internet access;

- connection speed.
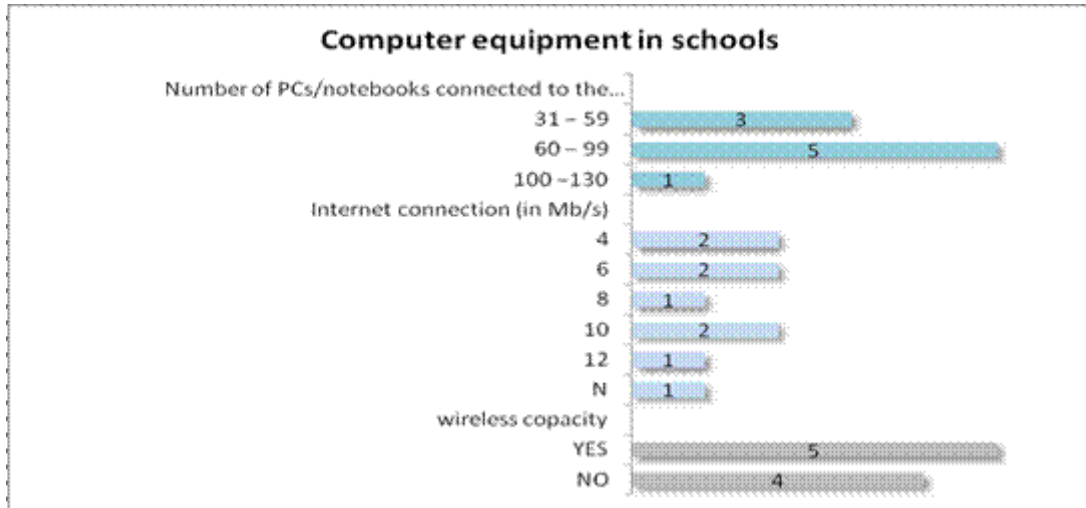
Figure 1: Computer equipment in schools

Schools using a 4 Mb/s connection speed are restricted in the use of the Internet. When playing media content such as video, students can experience buffering problems. However, for email communication, surfing the web, playing music, using Skype or watching video in standard resolution the connection speed is sufficient. Better and most commonly available at schools is the connection speed between 6–10 Mb/s. Schools using this speed should not experience any major problems when using social media. Schools using the connection speed over 10 Mb/s are the closest to the requirements for integrating social media into classroom education (Moton 2013).

Attitudes of school management to using social media at elementary schools:
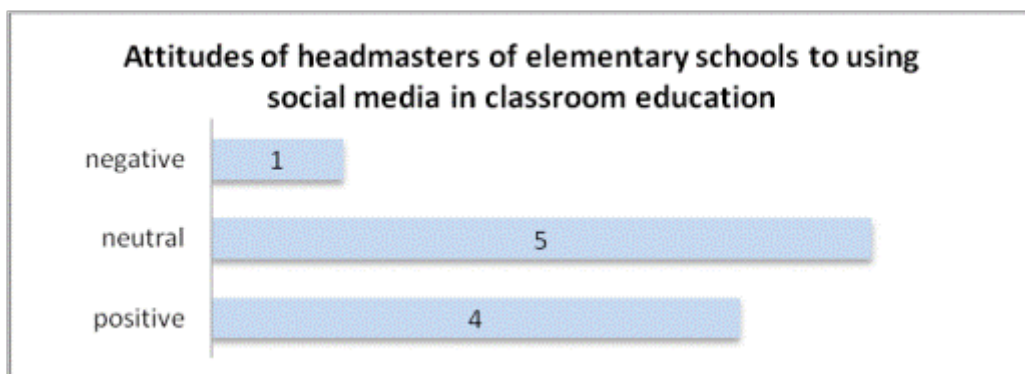
Figure 2: Attitudes of headmasters to using social media in classroom education

Attitudes of headmasters of elementary schools towards the use of social media in education can be described as proactive. That is to say, 40 % of surveyed headmasters (or other competent people) support social media in classroom education, 50 % have a neutral attitude, that is, they do not support social media in classroom education, but neither do they hinder them, and only 10 % of respondents hold a negative attitude – the school takes steps that limit the availability of social media.

Current utilization of social media at the elementary school

A total of 80 % of respondents indicated they use social media in classroom education; the following social media were listed specifically: YouTube, Skype and Moodle. Currently, the most exploited social medium at

elementary schools is the already mentioned YouTube, which is considered the largest Internet site for sharing video content. Up to 75 % of respondents are using this medium. The videos used in classroom are currently to compliment the standard curriculum, which views the students only as passive recipients of information.

Social media is finding increased application mainly in history, geography, science, informatics, mathematics, Czech and foreign languages. 20 % of elementary schools (or more precisely their headmasters) deny using social media for educational activities.

Social media and project activities

Further, a question was asked about the utilization of social media in school project activities. About 60 % of respondents encountered/are encountering social media in project activities, most commonly in eTwinning projects, such as My Town in Numbers and A Taste of Maths. The remaining 40 % of respondents deny ever encountering social media in their project activities.
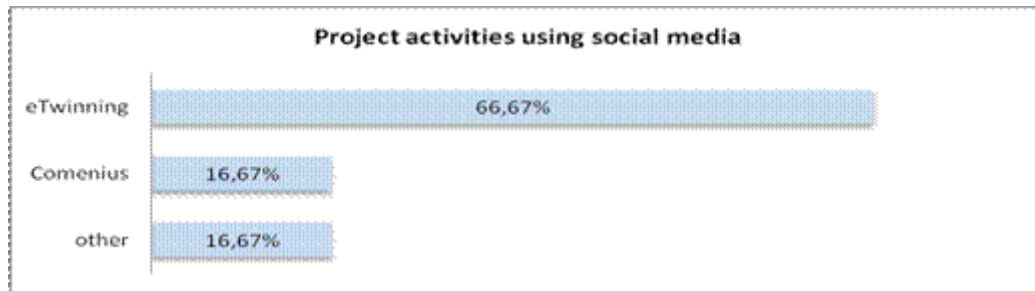
Figure 3: Project activities with utilization of social media

Factors hindering the use of social media in classroom education

When asked what factors are hindering fully-fledged use of social media in classroom education in elementary schools, the respondents gave very diverse answers. Some think that the lack of time is a significant factor. Schools are busy with other project activities and do not have time for any additional projects. Others are afraid of the open access to the Internet and the risks associated with it. Still others answered that they do not know or left the question unanswered.

It was also ascertained that some elementary schools banned the use of social networks, particularly Facebook, for children up to 13 years of age.

The interest of elementary schools in innovative ways of using social media in classroom education

It turns out that despite certain fears and prejudices tied to the presently popular phenomenon, particularly Facebook, the headmasters maintain an open attitude. They do not oppose the idea of innovative ways of using social media in classroom education as long as it is in compliance with the rules; on the contrary, most of them are in favor of this idea. They are aware of the dynamic development of modern technologies and of the need to facilitate the development of students' skills for their future careers.
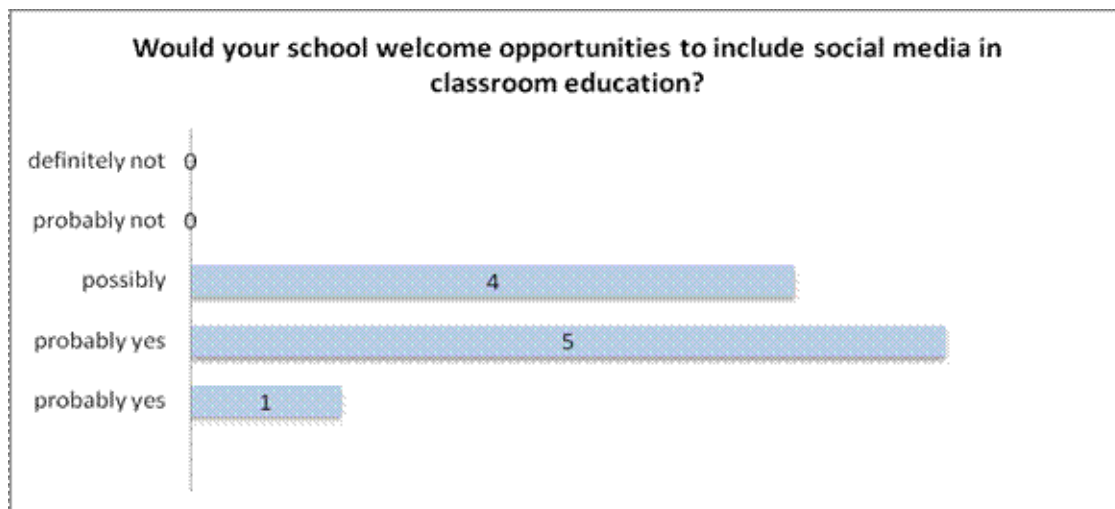
Figure 4: Would your school welcome opportunities to include social media in classroom education

The results of the preliminary investigation were following:

- headmasters with conservative views are concerned about the social networks environment: "Facebook is a space for cyberbullying, students are looking for an escape from reality into the virtual world, groups of so-called 'e-friends' are emerging";
- the gap between the students' skills in mobile technologies and the teachers' skills, who are mostly acquainted with basic computer literacy, is getting bigger;
- some teachers fear a loss of respect and of emerging problems caused by leaving the traditional (and already proven) teaching methods;
- teachers do not trust to mobile devices in classrooms, some reasons are the following:
  - pupils use for activities unrelated to teaching;
  - socio-economic risks;
  - technical risks;
  - socially pathological phenomena can occur;
  - pupils can fall into bad habits while processing information.

    Note. "Possible risks of using mobile technology in classroom" describes Javorcik (2014).

5. Conclusion

The preliminary investigation (pilot survey) revealed certain shortcomings in the preparation and distribution of questionnaires, which will be corrected in the main survey. We prepare to address all elementary schools in the Czech Republic and we assume a 35 % response rate. Above all, the preliminary investigation indicated directions to be taken in order to address a wide range of issues and problems of "Introducing social media into classroom education in elementary schools".

It is evident that it is necessary to gain the trust of teachers to social media: first, to overcome traditional opinions that social media are about entertainment, but mainly to point out potential danger and advice on how to prevent or avoid it. Among other things at our department, we are dealing with the issue of e-security (Javorcik and Kapoun 2013) which we plan to extend to include the topic of students' work with social networks during a class.

Even before the second phase of the survey – the qualitative research, it is necessary to seek and analyze successful solutions, such eTwinning projects, case studies, etc. and explore the potential of social media. These findings then should serve as a base for the preparation of the structured interview. The results of the interview survey should provide suggestions on how to use social media in classroom education and also provide specific methodically developed examples.

Teachers and school management realize that "social networks in classroom education are a necessity" and would welcome assistance, such as well working practical examples, methodologies, trainings, recommendation how to deal with possible risks from net, etc.

Acknowledgment

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Facebook and the Changing Way we Speak

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Abstract: As the importance of the internet is constantly growing and social media are becoming more and more popular, the various ways of internet-based communication influence the way we communicate with each other in all areas of our lives. From a linguistic point of view some of the questions arising from this trend are which particular language features are characteristic of certain forms of written online communication and if there are differences which can be made out between different groups of internet users. The paper takes a look at the profiles of a group of Facebook users who are students at a university of applied sciences in Austria and is supposed to show which impact online communication has on the written language styles of the students participating in the study. From the total number of 447 students in the field of information technology 66 students agreed to participate. Eventually the 50 profiles of the most active students in terms of Facebook entries were selected for the content/language analysis the paper is based on. The central issues of the paper are the frequency of four selected categories of media-linguistic means of expression such as the use of abbreviations and emoticons, the differences in language use between long-time Facebook users and those who have only recently become Facebook members, and the difference in communication styles between female and male students.

1. Background

In his Philosophical Investigations (1953) Ludwig Wittgenstein repeatedly refers to his notion of language games, i.e. he sees the use of language in terms of a rule-governed, self-contained practice like a game (Schulte 1992). All of our social lives are characterized by participating in a variety of such language games, i. e. we take part in a series of interconnected and – due to globalization and social media also intercultural – language games. All of these so-called games are based on certain rules which differ for different groups of people but which interact with and influence each other. The internet, which has become one the most common means of communication nowadays, definitely has a huge influence not only on the way we communicate with each other but also on the language we use when communicating via the net. It has an impact on the language and vocabulary we use to communicate with each other in writing and even speaking. Thus, looking at text messages such as Facebook entries, the slow infiltration of our language by new internet terminology, abbreviations and acronyms as well as words and phrases as part of a world-language such as English can hardly be avoided.

Language is our most important means of communication and thus is adapting itself to different communication, life and work forms which are all influenced by an overwhelming wave of globalization which goes hand in hand with English becoming a 'lingua franca' in terms of politics, business and culture. Therefore globalization in general and the spread of Web 2.0 technologies in particular are promoting a new form of language use worldwide which also requires the German language to continuously adapt and even renew itself. These adaptions are characterized by the partly massive acquisition of English loanwords. The use of the internet began to spread only about 20 years ago and has meanwhile resulted in the first generation of digital natives. These youths and young adults use the internet as their main means of communication which results in a sort of mixing up the German and English language not only in online communication but already in their everyday lives. Obviously young German native speakers can't do without a partly massive use of English words and phrases any more. This doesn't only concern online terminology but also words like 'cool', 'wow', 'stylish', 'hi' which are rooted in Anglophone youth culture and the world of music (Weindl 2011). Besides, Anglicisms are not only part of youth culture, they are irresistibly penetrating the fields of IT, marketing and business in general.

This paper particularly focusses on the – in a way playful – language use of a rather homogenous group of Facebook users of the younger generation with their specific language styles and patterns in written online

communication. After defining some essential terminology involved in the issue, the results of the analysis of altogether 50 Facebook postings of students of the information technology department at the University of Applied Sciences Burgenland are presented. Determining which online-specific language features appear in Facebook communication within this group of students will be a main part of this paper, followed by the questions of whether there are differences in language use between long-term Facebook users and those who only recently registered as well as differences between female and male users independently of the duration of their Facebook membership.

2. Technology and Communication

Computers and the internet obviously brought about some major changes in the way we communicate with each other. Snail mail is outdated, e-mail prevails in business communication and text messaging via Facebook and other social networks is dominating any sort of written online communication between private users. The following explanations summarize some important basics of online communication which are relevant for this paper.

2.1 Social Software

Social software primarily functions to allow communication and user collaboration. Examples of social software include, instant messaging, e-mail, internet forums, chat rooms, wikis (web pages allowing editing by viewers), web blogs and social network services (participants that communicate about shared interests). They allow one-to-one, one-to-many and many-to-many forms of communication. In general social software is a form of internet use by all kinds of users, regardless of age or profession. In this way social software focusses on social interaction and collaboration processes on the internet between all sorts of users (Ebersbach 2011).

2.2 2.2 Social Network

A social network is defined as a chain of individuals and their personal connections. Expanding one's connections with other people is a technique that can be used both for personal or business reasons. Social networking applications make use of the associations between individuals to further facilitate the creation of new connections with other people. This could be used to make new friends and connect with old ones, as many people do on Facebook, or to expand one's professional connections through a business network like LinkedIn (Ebersbach 2011).

3. Language and Communication

Language and writing are essential cultural assets of our societies. Like any other language the German language has changed through the ages and keeps on changing in view of global developments in networking and communication. However, modifications in German language use are often being eyed critically. Some linguists talk about the decay of the German language and a too strong Anglo-American influence, seeing a major threat in Twitter, SMS & Co for the language competences of teenagers. The German language has even come up with pseudo-Anglicisms such as 'Handy' for mobile phone, adapting its pronunciation to German, with this example German /ä/ or /e/ instead of English /æ/ (Brammertz 2009).

3.1 Online-Communication

Generally, interpersonal communication is considered a process in which two participants (a sender and a receiver) exchange information by speaking, writing, or using some other medium. Interpersonal online-communication comprises all communicative exchanges by means of an electronic medium such as a computer and can also take place between more than two people via chat, newsgroup or web-based social networks such as Xing, MySpace or Facebook (Fraas et al 2012).

3.2 Online-Specific Language Features

Within the last 20 years the internet has shaped the German language in many different ways such as the introduction of new words and phrases as a result of the adaption of our language around new technological concepts and features or giving familiar words slightly new meanings (e. g. post, friend, twitter). This paper, however, doesn't focus on the use and meaning of particular words but four online general categories language phenomena that have shaped the way we communicate online.

3.2.1 Acronyms/Abbreviations

Since synchronous communication requires fast typing, special language features such as acronyms and abbreviations can be found quite frequently. Acronyms are some of the oldest linguistic phenomena in communication via computer networks. Acronyms are made up of the initial letters of two or more words. According to Döring (2003) acronyms are partly built due to lack of time. Meanwhile they have become part of online text messaging. Mass media use them quite often as well because of their originality and often also entertaining value.

In the field of computer technology three-letter-acronyms are quite popular to label innovations and technologies, for example the commonly used acronym CAD, which stands for "Computer Aided Desgin". In general two types of acronyms can be distinguished, those which are based on writing, such as CAD, and those based on pronunciation (e.g. cu=see you). Concerning the latter, in cyberspace acronyms are very frequently based on the English language, making use of homophones. Usually numbers, signs and letters are used to form acronyms. The letters '2' and '4' often stand for 'to' and 'for', 'r' is used instead of 'are' or 'y' instead of 'why'. Besides, some playful elements can be observed, such as 'rotfl' for 'rolling on the floor laughing'. Synonymously the acronym 'lol' for 'laughing out loud' is used.

The table below shows some commonly used acronyms in English and German.

Table 1: Selected acronyms

B4 = before	IC = I see
CU = see you	F2F = face to face
N8 = night	FYI = for your information
LOL = laughing out loud	AFAIK = as far as I know
BBL = be back later	IMHO = in my humble opinion
BTW = by the way	LG = Liebe Grüße
ASAP = as soon as possible	(kind regards)
ROTFL = rolling on the floor laughing	MFG = Mit freundlichen Grüßen
2L8 = too late	(kind regards)
BB = bye bye	ZZ = zurzeit
UOK? = are you ok?	(at the moment)
2D = to delete	KK = kein Kommentar
JK = just kidding	(no comment)

3.2.2 Ideograms (Emoticons)

An ideogram is a written symbol that represents an idea or object directly rather than a particular word or speech sound. Well known examples of ideograms in online communication are emoticons. They have been used for more than 20 years in e-mailing. They consist of the ASCII-signs bracket, comma, dot, colon and hyphen. By means of these 'smileys' meta-communicative coded messages can be sent. Emotical icons (emoticons) are supposed to replace the facial expressions and gestures of f2f-communication. The etymological idea of an icon is that of 'likeness' or 'similarity' (from Greek *eikon*). In this way icons are signs, images or representations which have a characteristic in common with the thing they signify. The writer uses such emoticons to "textualize" his emotions and to inform the reader about how to interpret his message while the reader uses them to interpret the message of the writer. Compared to asynchronous communication, in synchronous communication emoticons often show no 'nose' as they can be typed more quickly, for example :) instead of :-). Writing messages without emoticons can lead to misunderstandings or misinterpretations as a statement which is supposed to funny could be taken seriously (Haase 1997).

In the table below some commonly used ideograms/emoticons are listed.

Table 2: Selected ideograms

:-) = happy	:-> = sarcasm
:- (= sad, angry	8-) = wearer of glasses
;-) = wink	:-/ = undecided
:-D = laugh	:-X = big kiss
:-o = surprise	:-P = grin
:-@ = scream	:-c = very sad
:-* = kiss	xD = very happy

3.2.3 Anglicisms

English loanwords are frequently used in information technology, advertising and business. Verbs such as 'download', 'mail' or 'surf' are conjugated like any other German verb. Similar to *Lingua Franca* in the middle ages English is penetrating languages all around the world. Most of the words come from the field of computer technology in which new terms for processes and products need to be found continuously. Words like 'app' for 'application' are as frequently found as words such as 'cool' and 'wow', expressions which are predominantly used by teenagers. While some linguists see a decay of the German language in such developments, others speak about a live, developable language that is adapting to our needs (Brammertz 2009).

3.2.4 Stylistic forms

First, one of the most common stylistic form in online communication is the use of capital letters which convey the notion of aggression, dynamics, emphasis or screaming (e. g.: 'I'm sure, I DIDN'T DO IT!'). The same holds true for letters in bold which also convey some sort of audibility which generally lacks in written messages (e.g. 'Who told you **that**?'). Second, greetings which are usually found in telephone or f2f-communication (e. g. 'hi' and 'hey') can also be found quite frequently and third, so called sound-words which are a common feature of chat-communication (e. g. 'hmmmm', 'aaaaaah') also have their room in asynchronous text messaging. Finally, the use of action words within two asterisks (**) separated from the sentence itself need be mentioned (e. g. *smile*, *grin*, *rofl*) (Döring 2003).

In addition, from the very beginning of e-mail communication, case insensitivity has become an inherent feature of the German language which has quite a number of capitalisation rules to determine whether an upper or lower case letter is to be used in a given context. Contrary to the English language, for instance, in German the first letter of all nouns is capitalised. The reasons for neglecting capitalisation rules might be economic ones, similar to the use of a simple question mark indicating complete bewilderment. The abandonment of proper punctuation has to be mentioned as another linguistic phenomenon of online communication which might also have resulted from the speed of online-communication (Haase 1997). Another characteristic is the high number of misspellings in online-communication, a phenomenon many linguists are worried about. Santillán (2009) views the type and amount of omissions found in written German online-communication critically, e. g. the omission (Tilgung) of word-final letters similar to spoken German language (e. g. 'das is' (English 'that is') instead of 'das **ist**'). Assimilations are another form of adoption to oral German (e. g. 'hab**s**' (English 'got it') instead of 'habe es' or 'auf**s**' (English 'onto') instead of 'auf das'), as well as reductions, namely subject reductions (elapsing personal pronouns such as I and you, e. g. 'bin nervös' (English 'I'm nervous') instead of '**Ich** bin nervös'), and syllable reductions, such as the syllable –en (e.g. 'habn' (English 'have') instead of 'hab**e**n'), the prefix 'ge-' such as in 'gangen' (English 'gone') instead of '**ge**gangen' and the word-final syllable '-er' (e.g. 'supa' (English 'super') instead of 'sup**er**' and 'wieda' (English 'again') instead of 'wied**er**').

4. Empirical study

The study is based on postings of a quite homogenous group of 50 full-time students of the Department of Information Technology and Information Management at the University of Applied Sciences Burgenland. Students of the first, third and fifth semester of two different bachelor programmes (Information, Media and Communication/IT Infrastructure-Management) were asked to sign a list and agree to participate in the study which allows to analyse their Facebook entries in terms of specific linguistic features. Altogether 66 students signed the list, specifying their first and last name, age, bachelor programme, semester, user name, and whether they have private or public profile. The students then received a friend request to be able to participate in the study. In the following month the activities of the participants were monitored in terms of the frequency of their postings. Eventually 50 Facebook profiles of the most active 50 students were selected and analysed by means of content analysis. As only the 15 most recent postings of each participant were taken into account 750 text messages remained to be examined.

4.1 Content Analysis

According to the Web Centre for Social Research Methods content analysis is generally defined as 'the analysis of text documents'. 'The analysis can be quantitative, qualitative or both. Typically, the major purpose of content analysis is to identify patterns in text'. Content analysis is an extremely broad area of research, which roughly includes

- the thematic analysis of any kind of text such as notes, articles, papers, memos or postings with regard to themes and major ideas,

- the indexing of texts, and

- the quantitative descriptive analysis of a text, finding out how frequently certain words or phrases were used in the text (Früh 2001), (Luzar 2004), (Merten 1995).

4.2 Central Research Questions and Hypotheses

By means of content analysis the texts were analysed according to the following questions:

- With which frequency are the language phenomena in 3.3 used by the overall target group?

- Are there differences between long-term users and those who joined Facebook only recently?

- Is there a difference between female and male students regardless of the duration of their memberships?

The first hypothesis underlying this study is based on the idea that the use of new media for communication not only results in new communication styles but also new types of texts which again show specific linguistic features. These particular features have already been stated in various literature and thus should be all more or less present in the Facebook entries of the students. The second hypothesis basically says that the longer you are part of a certain group the more you are adapting its communication style and language. Hence, the longer a student is communicating via Facebook, the more of these language features should be used or occur. The third question on gender-specific differences in language use arose from mere interest in the subject.

As already mentioned above, the language features of written online-communication were divided into the four language categories described in chapter 3.3. The analysis comprised the most recent 15 postings of altogether 50 participants (25 females and 25 males) which makes up 750 postings for research. The data was collected in excel files, numbering each student and each language category.

5. Results

The description of the results of the study aims at determining the quantitative frequencies of the four underlying linguistic categories. It will be shown that some of the underlying hypotheses seem to be valid and that there are group-specific differences concerning the predominance of the respective linguistic features.

5.1 Are There Differences in Language use Between Long-Term and Short-Term Facebook Users?

Taking a look at the profiles of the 66 participants it showed that only 10 students joined Facebook before 2010. Therefore it was decided to group those 10 students who registered between 2004 and 2009 into 'long-term users' while the remaining 40 students who joined Facebook between 2010 and 2012 were allocated to the group 'short-term users'. Eventually only the profiles of the 10 most active short-term users were used and compared to those of the 10 long-term users. The results are presented in Table 3.

Table 3: Total number of linguistic features

Linguistic Category	Long-term users (10)	Short-term users (10)
Abbreviations/Acronyms	3	1
Ideograms (Emoticons)	43	43
Anglicisms	25	21
Stylistic forms	31	22
Total	**102**	**87**

As shown in Table 3, examples of all of the respective linguistic features can be found in the 300 messages of the 20 long-term and short-term Facebook users. In general – maybe also due to the small sample groups – hardly any differences in the frequency of use of certain linguistic features can be made out between long-term and short-term users. What can be stated, however, is that ideograms (emoticons) obviously appear more often in the postings than the remaining language features. Examples of abbreviations/acronyms and

Anglicisms are given in the table below. It shows that three of the four acronyms used are actually Anglicisms and that the use of upper and lower case seems little important when messaging.

Table 4: Examples of abbreviations, acronyms and Anglicisms

Abbreviations/Acronyms	Anglicisms
AG = Alles Gute *(best wishes)*	'thank god it's friday'
BTW = by the way	'yeeesss'
WTF = what the fuck	'damn … old but good'
OMG = oh my god	'let's do this, FUCK'
	'awesome'
	'fucking Yeah'
	'finally'
	'can't wait for it'
	'nice'
	'powder deluxe'
	'is it really that cold in our room'

In the category of stylistic forms it shows that they are more often used by long-term users. Emphatic expressions such as 'jaaaaaaaaaaaa'/'yeeeeeessss' are also more commonly used in the messages of this sample group as well as capital letters and sound words. Very often vernacular expressions and phrases, a sort of written oral language, can be found, for instance 'ruf dich glei an, wa ned da' instead of '**Ich** ruf**e** dich glei**ch** an, **ich** wa**r nicht** da' *(I'll call you back immediately, I wasn't in)*. This mirroring of the spoken language also implies the omission of word-final letters such as 'e', 'ch' and 'r' as well as subject reductions/omissions of pronouns ('ich'). This speaks in favour of the hypothesis that text messages show more grammatical incorrectness and misspellings the longer someone is posting on Facebook. Short-term users still put more emphasis on grammatical correctness in terms of upper and lower case as well as punctuation.

5.2 Regardless of the Duration Of Membership, are There Differences in Language use Between Female and Male Students?

Empirical studies are quite often concerned with gender-specific differences. In 2011 Burger et al presented a computer programme which is supposed to determine whether a tweet is written by a female or male user. A hit rate of 76 per cent was achieved. The software also spit out long lists of words which from a statistical point of view are used most often either by women or men. It showed that the pronoun 'my' is rather unmasking. Women quite often say 'my' in combination with 'husband', 'yoghurt' and 'yoga' while men very often talk about 'my wife', 'my zipper' or 'my beer'. Besides, women use smileys and exclamation marks more frequently than men (Zeit Online 2011).

The results of the quantitative analysis of the 750 postings of the 25 female and 25 male students are presented in Table 5.

Table 5: Frequency of linguistic features according to gender

Linguistic Category	female students (25)	male students (25)
Abbreviations /Acronyms	10	8
Ideograms (Emoticons)	194	63
Anglicisms	67	49
Stylistic forms	111	46
Total	**382**	**166**

The results suggest that there's hardly any difference in the use of abbreviations and acronyms between female and male Facebook users. Examples of the abbreviations and acronyms found in the postings are 'WYSIWYG' *(what you see is what you get)*, 'WTF' *(what the fuck)*, 'FTW' *(for the win)*, 'BTW' *(by the way)*, 'OMG' *(oh my god)* and '9to9' *(nine to nine)*.

According to the notion of Burger et al it shows that female students use emoticons more often than their male colleagues. In general, the smileys ':-)', '<3', ';)' and ':D' were used most often, usually without 'nose'.

Sometimes smileys were also used in a row. One could venture the guess that women tend to be more emotional in their messages than men and long to unveil more of their emotional lives.

As far as Anglicisms are concerned, it showed that they are used more often by women than by men. Interestingly, the latter tend to use them also to show annoyance or aggression. Taking the word 'shopaholiken' for example, it shows that young German speakers also tend to Germanize English words by applying German orthography and flexion.

Table 6: Examples of Anglicisms used by female and male students

Anglicisms used by females	'shopaholiken'
	'I think I wanna marri u :)'
	'favs'
	'I'm in <3'
	'9to9 learnsession'
	'partysession'
	'Rolling in the diiiiiip'
	'ready for paaarteeeyyyyy'
	'sooo fluffy <3 ;-)'
	'coffetime'
	'holy moly'
Anglicisms used by males	'In ya face ivica'
	'Thursday is … hell yeah!!!'

The underlying hypothesis that the often playful use of the language in text messages makes people forget about grammatical correctness or simply results from the speed of writing in this study only holds true for the female students. Male students surprisingly showed fewer informalities or violations of rules in orthography including the use of upper and lower case and punctuation minimalism. In addition, male students are much more accurate in punctuation than their female colleagues who often tend to use full stops and emoticons to pretty up their messages. Altogether they put more emotions into their messages, use more mirrored forms of spoken language and assimilations, e. g. 'packs ned' *(I don't believe it)*, 'kanns' *(can do it)*, and also more sound words such as 'HAHAHAHAAH', 'AAAAH' and 'WOHOOO'. They also use more inflective forms of German verbs such as '*FREU*' *(from 'freuen' – being happy)* and '*TRÄUM*' *(from 'träumen' – dreaming)*. Male students on the other hand very often use the word 'check' followed by a series of exclamation marks ('CHECK!!!!!!!!!!!!!!!'). However, both sample groups quite equally show word-final omissions of letters and omissions of personal pronouns as well as the use of the upper case to emphasize their messages.

6. Summary and Conclusion

Basically, the underlying research method, i.e. quantitative content analysis, proved to be a viable research instrument. The sample group consisted of 50 students, the sample text messages of altogether 750 Facebook entries. The study only comprised the most recent 15 postings of the 25 female and 25 male IT students. A representative study, however, would have to be based on a much larger sample group.

Nevertheless, allocating the participating students to four sample groups, namely long-term and short-term users, female and male students, showed interesting results regarding so called internet-speak used by Facebook members. The analysis was done by means of entries into Excel spreadsheets to find out about the frequency of the different linguistic forms used by the different sample groups. Interestingly, it turned out that only 10 of the 66 students who originally agreed to participate in the study were long-term Facebook users who joined the network between 2004 and 2009, i. e. before they started their university studies. Finally, the results of long-term and short-term users were compared to each other as well as the results of female and male students, all in view of the four respective linguistic categories. Basically, no noteworthy differences between long-term and short-term users could be found. One crucial reason might have been that only 20 profiles, i. e. 300 text messages, were taken into account (the ten long-term users were compared to the 10 most active short-term users). The differences between male and female students remain to be proved to be significant as it showed that female students tend to use more emoticons and stylistic forms than their male colleagues. However, it could be shown that media-specific language is used quite frequently which definitely is a result of the "playful" use of the language by students when posting their messages in Facebook. Relying on their knowledge about media and media-specific language, some students even tend to 'invent' new words, partly reverting to English words. As the internet and its ways of communication has only been around for

about 20 years, new words and expressions doubtlessly will continue to develop as well as new acronyms and abbreviations.

So far one of the most outstanding features of online communication in social networks has been the ever increasing speed of communication which results in condensed language patterns partly by using new words, acronyms and abbreviations. Emoticons serve the same purpose and thus also supersede the need to type long phrases or sentences. Some critics may complain about the massive use of abbreviations, the lack of coherence, proper spelling and punctuation, which seem to be an inherent feature of any online text messages such as e-mails, tweets and Facebook entries. Whether this is a sign for the downfall of the German language lies in the eye of the beholder. In any case digital-age vernacular will continue to develop and be brought into the mainstream by digital natives who – contrary to middle-aged and elderly people who grew up without the internet – are acclimatized to communicating and maybe even living online. Technology has irreversibly worked its way into every aspect of our lives and thus not only extends the German language's expressive richness but also that of all other languages in which social media are omnipresent. Online messaging and facebooking of course have their own purpose, structure and rules which in many ways differ from traditional, formal, written communication. Nonetheless, in some areas informal internet-speak has already found its way into formal written communication in education and business, particularly in e-mailing. To what extend this subtle trend of informal language use in formal contexts is actually accepted remains to be examined.

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Leadership, Leaderlessness and Social Media: The Case of the Occupy Movement.

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Abstract: Despite all charismatic leaders who led the social movements all over the world, now the world is witnessing movements with no leaders such as the Occupy movement and the Arab Spring. This paper's aim is to look at the leadership of these leaderless movements with a different and fairly new lens, i.e. multimodality of leadership and leadership as process, and take into consideration non-human agencies and argue about their potential role as leader. For doing so, the eParticipation of Occupy members in terms of leadership and how this eParticipation has made its way through the leadership role by considering the Internet and its accompanying technology as non-human actors in this role will be investigated by employing the Actor-Network Theory (ANT).

Keywords: Leadership, Leaderlessness, eParticipation, New Media, Process, ANT

1. Introduction

Social movements always feature in societies when people want to change their lives and make their society a better place to live. In the past, it was always the case in most of the social movements to have a leader(s) and consequently followers who had been led by their leader(s) to the shared goals. However, this trend has changed in recent years and now we are witnessing leaderless social movements in the world. These movements are everywhere. Mexico's Zapatista communities of Chiapas, landless movements in Brazil, poor women and men in shanty-towns of South Africa, Indian people who demonstrate to protect the environment, Ecuador and Bolivia's movements of stopping privatization, European movements as well as United States and Canadian movements, where autonomous groupings are being built on the basis of consensus decision making, anti-hierarchy, and anti-capitalism (Sitrin 2006). Among all these social movements, Arab Spring and the Occupy movement are the most well-known in terms of their leaderlessness. These movements are not similar to other social movements, where there is a leader(s) and followers who cheer and follow those charismatic leaders. Nor they are creating party platforms or programs. Bamyeh (2012) considers the power of a popular movement, where it can overcome a dictatorship. 'The Arab spring, then, has undermined axiomatic authoritarian propositions of classical revolutionary thought, and showed that it is possible to struggle against and defeat a well-armed hierarchical authority with a popular movement not driven by any authority' (Bamyeh 2012: 40). Last but not least, the Occupy movement, which was inspired by Arab Spring, is the latest example of the leaderless movements. All these social movements are different in various aspects, such as their goals, their contexts, their beliefs and so on, but they share one important characteristic with each other: the leaderlessness of their movements. So, what we are witnessing now are movements with no leaders, full of enthusiastic people who advocate the leaderlessness of their movements. These people do not like to be led or to lead a movement, but what they want can be summarised in one word: change. Before the Arab Spring or the Occupy movements all over the world, Hardt and Negri (2001) talked about the emergence of a multitude who are going to fight with Empire. They argue that the term 'Empire' is not the same as the Empires of Rome, China, etc., but rather as a concept, which is characterized fundamentally by a lack of boundaries: 'Empire's rule has no limits' (Hardt and Negri 2001: : XiV). In other words, it can be argued that Empire is a new postmodern phenomenon which replaces the modern phenomenon of imperialism in an ongoing transition. Hardt and Negri (2001) argue that emergence of the multitude is inevitable as '[T]oday nearly all humanity is to some degree absorbed within or subordinated to the networks of capitalist exploitation. We see now an ever more extreme separation of a small minority that controls enormous wealth from multitudes that live in poverty at the limit of powerlessness' (Hardt and Negri, 2001: XiV). Almost ten years after their thoughtful argument, one of the core slogans of the Occupy movement which spread all over the world was 'we are the 99%'. The slogan has been used in social networking sites, mainstream Media, and also a blog has been created with this name to disseminate the words of the Occupy movement.

The above paragraph outlines the motif behind the Occupy movement in a nutshell and the reason why the movement has risen in the first place. What this paper is looking to investigate here is the leaderlessness of this movement, how the leadership role in the conventional concept in social movements has been ignored,

and also what happens in place of leadership. What are the impacts of eParticipation and social networking sites as non-human agencies in leaderless movements? To do so, there is a need to elaborate the timeline of the Occupy movement in order to make sense of the paper's argument.

2. The Inception and Timeline of the Occupy Movement

The Occupy Wall Street was started on September. 17, 2011 by hundreds of protesters who marched through the streets of Manhattan and began an encampment in Zuccotti Park, which has been called the'US Day of Rage's Occupation of Wall Street'. In its websites, the movement has been defined as a "leaderless resistance movement," which triggered similar protests across the U.S. and in more than 82 countries. The inception of the Occupy movement can be traced back to what has happened in the Middle East countries, which led to the Arab Spring. Leaderless revolutions in Tunisia, the Tahrir revolution in Egypt, and also Spain's indignados movement have inspired the Occupy movement. The idea of using a 'Day of Rage' has emerged from a Canadian blog (the Adbusters) and also the Wikileaks website.

In the article published in the Adbusters, which has been adopted as the inspiration of the Occupy movement and also the beginning of Occupy, it was written that: 'On September 17, we want to see 20,000 people flood into lower Manhattan, set up tents, kitchens, peaceful barricades and occupy Wall Street for a few months. Once there, we shall incessantly repeat one simple demand in a plurality of voices.'

The following outlines the other phases of Occupy after its initiation phase.

3. Occupation Phase

In the occupation phase, the gathering took place on September 17th, 2011. Once the movement had settled in a physical space, the importance of the other means of communication, rather than face-to-face communication, was undermined. Less than one month from the start of occupying Zuccotti Park, the movement spread all over the United States. On October 4th 2011, there were protests in Boston, Chicago, Kona, Hawaii, Portland, Los Angeles, Ore, Seattle, and so on[1]. On October 15th 2011, the first gathering of protesters in London took place on the steps of St. Paul's Cathedral after they were prevented from occupying the London Stock Exchange by a police barricade[2]. In the occupation phase, the physical spaces like Zuccotti Park or St. Paul's Cathedral steps performed the role of organiser for people to come and communicate, rather than using social networking sites or other means of communication. However, the eParticipation of the movement's members and its supporters on social networking sites such as Facebook and Twitter helped the movement to spread its word and influence others by posting messages on Twitter or inspirational photos on Facebook and inviting people to gather in the occupied spaces. Also in terms of their use, there are differences among the new media platforms. For instance, Castells argues that unlike the Twitter and Facebook, the Tumblr page 'We are the 99%' wasn't used for broadcasting and planning upcoming events, but it was used to humanize the movement. Tumblr is a powerful storytelling platform, which enable people to write about their stories and share them with others. Therefore several stories have been posted on this platform which gains solidarity to Occupy movement.

4. Eviction Phase

Police began to evict Occupy sites after almost three months of their occupation. The Occupy Wall Street movement was evicted by the New York police on November 15th 2011. The Occupy London movement began one month after the Occupy Wall Street and was evicted almost two months after the eviction of the Zuccotti Park on February 28th 2012. The eviction of these movements from the physical public spaces that they had occupied for several months was a threat to the existence of the Occupy movement, and put it in latency for a while.

5. Latency and Post-Latency Phase

After the eviction, the movement suffered from a period of latency, but several Occupy members all over the world argued that the eviction was not the end of the movement. "We are calling on people to take the conversation out of St Paul's and into their homes," said Occupy campaigner Ronan McNern[3]. Also, another

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[1] http://timelines.latimes.com/occupy-wall-street-movement/
[2] http://www.telegraph.co.uk/news/uknews/law-and-order/9110341/Occupy-London-timeline.html#
[3] http://www.guardian.co.uk/uk/2012/oct/14/occupy-protest-st-pauls-pulpit-cathedral

protester said that "You can't evict an idea". In reality, the movement continued its existence in the virtual space, but this time the virtual space played the vital role as there was no physical space to occupy.

The post-latency phase is more engaged with new media (i.e. internet-based media) in terms of spreading the messages of Occupy or announcing the gatherings and general assemblies' dates, as well as influencing people by posts on Twitter or photos on Facebook pages. More importantly, it is a virtual space for people to join and discuss the latest issues, which are important for Occupy.

6. The Role of the Media Representation

Media representation is part of the culture industry. Adorno and Rabinbach have argued that 'it is a matter of something like a culture that arises spontaneously from the masses themselves, the contemporary form of popular art. From the latter the culture industry must be distinguished in the extreme. The culture industry fuses the old and familiar into a new quality' (Adorno and Rabinbach 1975: : 12). Hesmondhalgh (2007) takes this definition one step further when he argues that we are influenced by informational texts, such as newspapers, broadcast news programmes, documentaries and analytical books, but also by entertainment such as films, TV series, comics, music, video games, and so on, all of which provide us with recurring representations of the world and thus act as a kind of reporting. The cultural industries are therefore involved in the production of social meaning and include broadcasting, the film industries, the content aspect of internet industries, music industries, and so on, which are all activities that aim to communicate to an audience, and in doing so, they create texts. These texts help to constitute our inner, private lives and our public selves such as fantasies, emotions and identities. For instance, one photo on the Facebook page of Occupy London influenced thousands of people to gather and occupy the London Stock Exchange, where previous verbal invitations influenced just less than 50 people from that particular page. This clearly demonstrates the importance of semiotics and visual texts in influencing people. Moreover, the cultural industries have an influence on our understanding of the world. Hesmondhalgh points out that these texts are not just something to entertain or consume as 'a way of passing time – a mere diversion from other, more important things. All the same, the sheer amount of time that we spend experiencing texts, however distractedly we might do so, in itself makes the cultural industries a powerful factor in our lives' (Hesmondhalgh 2007: : 3). As mentioned above, these texts are not just something for passing time, for they can be used as a means of gathering people, influencing people and, particularly in the case of Occupy, as a virtual space for people to gather and express their feelings and ideas. All these internet-based media such as blogging, social networking sites and so on are categorized in the new media section of media representations. These will now be discussed briefly, in order to obtain a better understanding of the media representation evolution.

7. New Media

From the 1850s to the 1950s, the media relied on analogue systems such as photography, cinema, radio, and television. However, it is the arrival of the Internet and the World Wide Web in company with digitalization, which is a turning point that has led to the transformation of cultural production and cultural consumption. From this stage, the most important part of the new media was born. Blogging is one of the most significant tools for democratising the news. Coleman (2005, 27) argues that blogs 'diminish people's need to be spoken for by others'. This has led to the emergence of terms such as 'citizen journalism' and 'participatory journalism'. They have been framed as democratising, decentralising forces in societies which have had an effect on cultural industries. The framing is because of various factors; for instance, the Internet lowers entry barriers because distribution costs are lower – there are no licensing and transmission charges as for broadcasting, and also the Internet is dialogic and interactive, which allows more audience participation in the production of media artefacts than before by using blogging and podcasting.

Because of some of the important factors of the new media, such as the fact that they are dialogic and interactive (which allows people to take part, make arguments and express their opinions), the new media has been used broadly by contemporary social movements such as the Occupy movement and the Arab Spring. For eParticipation in these new media, Juris (2012) argues that in terms of using digital social networking such as websites, blogs, Facebook, and Twitter and so on, two logics can be considered: 'logic of networking' and 'logic of aggregation'. These two logics, as he argues, are different in terms of interpreting the logic of use of digital social media and the internet in general. The latter is a cultural framework which helps give rise to practices of communication and coordination across diversity and difference on the part of collective actors, and the

former involves the assembling of masses of individuals from diverse backgrounds within physical spaces (Juris 2012). The use of social networking sites in company with a Smartphone, which can be used to report an event with photo or footage in an instant, is a modern phenomenon. Despite the handiness of social media in terms of circulating information, their most effective aspect is the ability to get large numbers of individuals to converge in protest at particular physical locations, which is the logic of aggregation (Juris 2012). This is what has happened in the Occupy movement, where eParticipation was the most effective way of inviting people to gather in the physical space in the initiation and occupation phases mentioned above. Moreover, this logic of aggregation can be investigated from a different lens, which is space.

Gerbaudo (2012) points out the relationship between the new media and physical space in contemporary social movements. He argues that 'contemporary forms of protest communication, including activist tweets, Facebook pages, mobile phone apps and text massages revolve to great extent precisely around acts of choreographing: the mediated 'scene-setting' and 'scripting' of people's physical assembling in public space' (Gerbaudo 2012: : 40). He continues that the emphasis on adopting the notion of 'choreographing' is not only because of the bodily and emplaced nature of collective action, but also because of its symbolic and mediated character, and on the fact that media practices intervene in preparing the terrain, or setting the scene, for people coming together in public spaces (ibid). Gerbaudo (2012) argues that social media have been chiefly responsible for the construction of a choreography of assembly as a process of symbolic construction of public space which facilitates and guides the physical assembling of a highly dispersed and individualised constituency. Therefore, eParticipation has a vital role in these contemporary social movements, where most of the invitations and influences, as well as inspirations, come from the new media, especially social networking sites such as Facebook and Twitter. For the importance of eParticipation in the social networking sites, it is worthwhile looking at the population of these social networking sites. Facebook has more than 800 million active users who spend more than 9.7 billion minutes per day on the site where they share four billion pieces of content per day, including uploads of 250 million photos (Wilson et al. 2012). In assessing the importance of online social networking sites, Wilson et al. (2012) argue that they not only work as a reflection of existing social processes, but also they spawn new ones by changing the way hundreds of millions of people relate to one another and share information. Moreover, Facebook is by far the most popular online social networking site (Kreutz 2009), making it the logical place to begin investigating the patterns, causes, and consequences of the social processes associated with online social networking sites' usage (Wilson et al. 2012). One of the reasons that movements use the new media is related to the eParticipation of the members of these social networking sites: people who are politically active on the Web were already 'political junkies', and participation in politics will have been facilitated through the use of new information and communication technologies (ICTs) (Van Aelst and Walgrave 2002). Therefore, political action is made easier, faster and more universal by the developing technologies. ICTs lower the costs and obstacles of organizing collective action significantly (ibid). However, as Etzioni (1999) argues, by using the internet, the face-to-face contacts cannot be replaced by virtual contacts, but a combination of both is best to create and maintain some sort of community.

The other reason that can be added here with regard to the rise of eParticipation in social movements, which also underpins the leadership role of the media, is the anonymity of people who run the new media pages: this facilitates communication without being embarrassed about one's opinions and also allows the expression of ideas without any self-censoring because of other people's judgments. Turkle (1997) argues in her book that anonymity in cyberspace is potentially empowering: because we cannot see each other, we cannot judge each other and, consequently, virtual worlds are equalizing. Moreover, anonymous online settings are empowering because they facilitate identity exploration, or occupy identity positions which may be difficult to occupy in real life (Kennedy 2006). Rogers (2013) argues that social networking sites, especially Facebook, encourage third-party application in the new media style, realizing that not only users' content but also their applications increase the value as well as levels of eParticipation. Therefore, new media become a virtual space that underpins the equality and freedom of speech. People can express their opinions without accusation, which makes it an Utopia for the Occupy members.

8. Discussion

The five phases of the Occupy movement that have been outlined in this paper are involved with new media, but the degree of their involvement varies from phase to phase. In this section, the aim is to investigate leadership in this leaderless movement. It seems reasonable to discuss that there is a tendency among people

to recognise a social movement with its leader(s). There are great examples of the social movements all over the world which are recognized by their leaders, such as the African-American Civil Rights Movement with Dr Martin Luther King, the Indian nationalism movement with Gandhi, and the Chinese communist revolution with Mao, and so on. However, the Occupy movement does not possess any personal leader as with other social movements. This has been identified as an interesting question to investigate what happens in place of personal leaders in leaderless movements by using the Occupy movement as a case study. As there is no assigned leader either in formal or in informal pitch, leadership theories which advocate the leader-follower dyadic relationship cannot therefore help to investigate this question. In consequence, leadership must be adapted from particular ontological and epistemological standpoints which can suit the research question and also be able to answer it. Therefore, I have chosen leadership as process to investigate leadership, since by adopting it in this way we 'redefine leadership in terms of processes and practices organized by people in interaction, and study that interaction without becoming preoccupied with what formal leaders do and think' (Crevani et al., 2010: 78). However, my argument goes one step further and sees interactions with people and things as well, rather than just focusing on interaction between people: i.e. I consider the interaction between people and space, or people and technology, and in general interaction between people and things. In other words, multimodal research (which is related to Fairhurst and Grant's (2010) multimodal account that considers other means of generating meaning through, for example, the use of space, the body, clothing, technology, and so on) will help to find new potentialities of the leadership field (Alvesson and Spicer 2012). This also guides the research to consider other theories, especially Actor Network Theory (ANT), where the notions of new media and physical and virtual space are taken into account.

If we go back to the five phases of the Occupy movement, it seems reasonable to argue that these phases are related to non-human agencies, such as all sorts of Internet-based media (new media) and also physical space. According to the initiation phase of Occupy, this movement started with the invitation from Adbusters on Internet and was circulated via Twitter and Facebook pages, which made the occupation phase happen. The whole process of the Occupy movement is engaged with the Internet, whether it is for disseminating the words of Occupy or it is the invitation to come to the physical space. Thus, Castells argues that the Occupy movement 'was born on the Internet, diffused by the Internet, and maintained its presence on the Internet' (Castells 2013: 168). This eParticipation of the Occupy people makes the whole process of the gathering something that cannot be ignored by the public, which also made it alive. It was with Occupy from the start and is still the only option for them after the eviction phase, when the movement passed the latency phase and went to the post-latency phase, thereby occupying the virtual space (new media, i.e. social networking sites and blogs) instead of the physical space. Therefore, the eParticipation of the movement's members and supporters had and still has a major impact on the Occupy movement. This eParticipation can be investigated on the Internet: for instance, Occupy London has active accounts on both major social networking sites, Facebook and Twitter. In Facebook, there are two pages related to Occupy London that together have about 96000 fans, and on Twitter almost 46600 follow the Occupy London account. This is a very impressive number of supporters for the movement in the virtual space. But what is the impact of these new media and especially social networking sites for the Occupy movement? There are several answers to this question, but here I would like to flag up two which are related to this paper's argument. It is clear that in the information age, the use of the Internet and social networking sites is vital for most organizations and most groups who want to have more fans or followers in order to spread their words and ideas. Therefore, one answer to the above question might be the use of these social networking sites to spread the words of Occupy and also expand their circle of communication.

 If we come back to the question of leadership in this movement, the role of non-human agencies such as the Internet and virtual space are highlighted. Latour argues for the importance of non-human agencies when he says 'we have to turn away from an exclusive concern with social relations and weave them into a fabric that includes non-human actants, actants that offer the possibility of holding society together as a durable whole' (Latour 1991: 103). Latour argues that 'society and technology are not two ontologically distinct entities but more like phases of the same essential action' (Latour, 1991: 129). The revolutionary role of technology in recent years in terms of social movements (i.e. the use of Internet, computer and any other technology which leads to the eParticipation in these social movements and also what Coleman (2005: 27) argues as 'citizen journalism' and 'participatory journalism') must not be neglected. In terms of leadership, and with regard to Fairhurst and Grant's (2010) multimodal account which considers other means of generating meaning (i.e. the use of space, and the use of technology (new media)), it can be argued that the eParticipation of Occupy members on the Internet make it something more than a mere virtual space to share information and ideas.

Rather, the Internet and especially the new media becomes an actant which holds the leadership role in almost all phases of the Occupy movement, for it influences people as well as leads them by an emotional photo on a Facebook page or disseminates a police raid instantly by a Twitter account (Gerbaudo 2012). This is related to Law and Mol's argument that things find significance through their relations to other things and humans: 'entities give each other being … they enact each other' (Law and Mol 2008: 58). John Law argues that a central concern with operations of power is the social conceived as a heterogeneous network, with knowledge, action and power explained as network effects 'embodied in a variety of material forms' (Law 1992: 381). Therefore, if we agree with these core principles of ANT, then it seems reasonable to argue that the eParticipation embodied in Internet technologies becomes a process of leadership, as these actants (Internet, new media) generate an environment and a virtual space where people come to catch up with news and also to be led to what to do next, for the actants hold the network of knowledge, and this can exercise power with the eParticipation of their members. Therefore, if we appreciate the Internet as a technology which comes with its subsequent tools to use (such as computer, smartphones, and so on), we can surmise that eParticipation involves technology for its own sake. For the importance of the social construction of technology, Latour argues that ANT grants technology 'ontological dignity' (Latour and Venn 2002: : 254). In this era, the social construction of technology must be considered seriously, as Latour (2005) argues that any successful construction relies on non-human as well as human objects, with the non-humans typically playing the leading role. In this regard, and by taking into account the ontological assumption of this paper about leadership, which is leadership as process and appreciating Fairhurst and Grant's (2010) multimodal account about leadership, it can be argued that the Internet and especially the new media holds the leadership role as a non-human actor, where it facilitates a virtual place for eParticipation of the Occupy members, and where every person comes to be in the loop and to know what to do next.

To sum up, this paper has attempted to look at leadership in leaderless groups and the impact of eParticipation as a non-human actor by appreciating leadership as process, which facilitates the leadership in recent social movements and especially the Occupy movement.

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Using Social Media Interactions for Personalization and Adaptation in Digital Games

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Abstract: Most digital games connected to social media platforms tend to use the platform as information channel (for viral marketing primarily). Therefore only limited interaction patterns exist to allow the flow of user-generated content from the social media platforms into the game play. Still, this does not only allow innovative new ways of personalization and adaptation for game play experience, but also raises research questions about how user experience can be enhanced by the surrounding social network of the current game player. Additionally, activation of the ego-network to attend votes, contribute content and participate (partly) in the game can be used as a marketing channel. This is especially of interest for serious games that usually have only limited budgets. This paper provides insight into the Game Adaptation Model of the SoCom.KOM middleware solution that allows the use of social media data, metrics and interactions for game personalization and adaptation. The paper presents the prototype of a 3D adventure game that is connected to users of a social media application via SoCom.KOM. The evaluation results highlight the raised acceptance of players for social media publishing by the game instance and the acceptance of social media users to participate in the published prompts for participation and content contribution.

Keywords: Social Serious Games, Game Influencing, Social Media Interactions, Participation, Adaptation, Personalization

1. Introduction and Motivation

In a very condensed way the basic types of social media interactions can be listed as content publishing, sharing, discussing (including rating) and networking (Julien, 2011; Wankel, Marovich, & Stanaityte, 2010, pp. 7–10). These are not only used for casual interaction and socializing, but also for sincere information exchange and learning. Learning theories emphasize the importance of social interaction and learner activation as beneficial for learning effectiveness. This is one of the aspects leading to the use of digital games for learning. Such serious games that focus on academic learning are called educational games. They support the player's learn flow and game flow and adapt to player's needs and progress by personalization and adaptation technologies (Ratan & Ritterfeld, 2009). Beside the use of peer feedback in games (Konert, Richter, et al., 2012), using social media profile data and encouraging the interaction with the player's ego-network from within the game has great potential to further increase immersion and individualization of one's game play experience, leading to improved user experience and consequently to better acceptance, motivation and finally the achievement of the intended learning goals. Additionally, such a connection of game players with users in online social networks may increase awareness of these users when published posts not only contain achievement information, but prompt for active participation by voting, commenting or (other) content contributions that influence the game play of the befriended user who is currently playing. Even though the motivation is partly based on the expected improvements for educational games and the related learning outcomes, the focus of this paper and the described study is on improving game play experience in general as a first step. The results are expected to be used in future evaluations focusing on players' improvements in reaching the learning goals in case the new social media interactions are used.

While traditional (casual) and social media connected games use primarily the one-way posting of content (e.g. achievements and status messages) from the game to the social media feeds only and limit their personalization to the use of social media profile information (e.g. player's name), it appears to be a promising approach to investigate the core aspects that make a social game really a social game and use such functionality to enhance existing serious games by social media means. It is therefore the focus of this paper to investigate the use of social media interactions to support content and information transportation from the social media applications to the connected game instances to reach insight into the interaction between game players and social media users beyond the primarily used one-way content flow from game to social media platforms.

2. Related Work

The approach of using social media interactions to enhance the user experience of social media users and players of educational games suits the demanded extensions for serious games to overcome the current

limitations in reaching learning goals and measuring learning effects with such games. These demanded extensions are:

- Demand for social interaction functionality within the educational games (Shen, Wang, & Ritterfeld, 2009, p. 60; Wang, Shen, & Ritterfeld, 2009, p. 39)

- Support for peer tutoring interactions (Gee, 2009, p. 71)

- Support for peer collaboration interactions (Bente & Breuer, 2009, p. 327; Wang & Singhal, 2009, p. 273)

- Use of user-generated content in games and with such the provision of more suitable tasks and task formats (e.g. open format tasks) (Shute, Ventura, Bauer, & Zapata-Rivera, 2009, p. 307)

The application of the benefits of social media interactions (primarily networking) has been practiced for digital games since the early times of the internet. First, the communities were created around existing games (discussion boards) or as part of the game itself (e.g. O-Game[1], WOW online[2]). Later, when widely distributed online social network applications were present, the games were integrated or connected to these existing communities via provided Application Programming Interfaces (API) to utilize the existing network structure. In order to use the benefits of such social media connected games (social games) for the creation of social serious games that benefit from social media interaction, it seems valuable to consolidate and define the criteria of social games. As outlined in earlier publications, a social game is a video game satisfying the criteria of asynchronous play, casual multiplayer, coopetition and beneficial social media interaction (Konert, Göbel, & Steinmetz, 2012).

When combining the four core interactions of social media, the demanded extension from related work and the criteria needed for a social game, the conclusion can be drawn that the use of social media interactions to bring social game criteria into educational games is a valid approach to fulfill the demanded extensions. In the following this paper will focus on the demanded extensions of *social media interaction* and *use of user-generated content in games*. Details on the other two demanded aspects, peer tutoring and peer collaboration with social media can be found in (Konert, Wendel, Richter, & Göbel, 2013; Konert, Richter, et al., 2012).

3. Game Adaptation Model for Educational Games using Social Media Interactions

The game adaptation model differentiates between two parts: personalization via social media metrics and adaptation by social media interactions. The profile information is provided to game developers in a normalized form. This way profile data from several social media applications can be accessed transparently.

3.1 A Three-Dimensional Approach

To achieve the four targeted extension to educational games and to apply the four concepts of social gaming (as described earlier), the use of social game interactions appears to be more beneficial than reading profile data and social network metrics from the social media application only. As in related work and literature no existing interaction patterns for social game interactions could be found, the approach to social game interactions is characterized by an analysis of three dimensions to be considered:

- Game Situations (as distinct contexts the player can experience)

- Mapping Patterns (one to one, and many to one in a single-player educational game)

- Social Media Interaction Patterns (based on a categorization by Julien (2011))

Each of these dimensions consists of a list of manifestations, resulting in a three-dimensional space of constellations for possible interactions between the player (game) and the users (social media application). In this space, game situations are hard to list in a general, concise and exhaustive way. Therefore in cooperation with project partners of the related research project (see Acknowledgements) the authors build a first list of 11 situations focused on single-player educational games which are mostly adventure or simulation games (Gros, 2007, p. 26) without claiming the list to be complete. For the mapping patterns only two of possible four combinations are considerable in the underlying scenario as single-player games are used. Finally, for social media interaction patterns from eleven identified interactions in social media by (Julien, 2011) the patterns of buying and playing are not applicable in the context of interconnecting the player and connected users. The remaining eight patterns can be consolidated to the four interactions of publishing, sharing, discussing and

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[1] http://board.en.ogame.gameforge.com/, accessed on 4th January 2014
[2] http://us.battle.net/wow/en/community/ , accessed on 4th January 2014

networking mentioned before. Based on prior discussion of the resulting tables for all three dimensions in (Konert, Göbel, et al., 2012) Table 1 contains the found resulting interactions for the intersection of game situations and social media interaction patterns. The third dimension of mapping pattern (*1:1* or 1:n) is represented within the table cells by *italics* when only applicable to *1:1*. Otherwise both mapping patterns can be used for the interactions.

- **Table 1:** Interaction Examples for Game Contexts differentiated by Social Media Interactions and Mapping Pattern

Game Context	Social Media Interaction Type			
	Publishing (Post)	Sharing (for Likes)	Discussing (for Voting, Commenting)	Networking
(1) Game Start	*Equipment*	Stream, Game Status	Equipment, Scene Selection	*Cooperation*
(2) Game Scene (in general)	*Hints, Questions, Content*	Decisions, Achievements, Questions	Decisions, Achievements	*Cooperation*
(2.a) NPC[3] Dialog	Dialog Options, Names	Dialog Decisions, Questions	Traits, *Dialog Answers*	*Dialog Takeover*
(2.b) New Quest	Tasks, Items, Repairs	Choices, Questions	Rewards, Banter, Notes, Restrictions, Parameters	*Cooperation*
(2.c) Branching / Decision	*False Decision Items, Options*	Branching Decision	Banter	
(2.d) Minigame	Game Content	Performance, Achievements	Parameters	*Cooperation, Competition*
(2.e) Conflict / Fight		Performance, Achievements	Traits, Difficulty, Tactics, Inventory	Sidekick Support
(2.f) Quest Solving	*Rewards*	Rewards, Achievements	Assessment, Shouts of Victory, Remarks	
(3) Situation Loop (Repetition)[4]	*Hints, Assistance*			*Assistance (Cooperation)*
(4) Savegame		Game Status, Savegame itself	Remarks, Categorization	Affiliation, Usage
(5) Game End	*Questions*	Solutions, Game Status	Assessment, Barter, Acclamation (at stream)	

As illustrated in the table, most interactions for game situations are for interactions of posting (mainly 1:1) and discussing (appearing to be most valuable for 1:n). In this perspective, voting and commenting are considered as facets of interaction type discussing. As a result, the Game Adaptation Model consists of interaction patterns to be used by game developers for

- Posting as influence pattern for game situations where content (text, audio, video, ..) can be contributed by primarily one user

- Voting as an Influence pattern for game situations where content is already provided by game developers (e.g. user-generated content from the game) to be voted by several users in order to derive a condensed opinion, trend or majority.

- Extendable Voting as an influence pattern combining the first two in a sense, that users can add additional voting options by adding their own content. Other users can see all options (game provided ones and additional ones from other users) for voting.

- Discussing (or commenting) as an influence pattern in case a player created own content, achieved certain goals or asks a question to the social media network. Based on the published content comments can be re-integrated into game play (visually or influencing game parameters).

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[3] Non-Player Character (NPC)
[4] Situation Loops appear,

- Sharing as an influence pattern in analogy to discussing (e.g. for achievements or epic moment in game play), primarily for collecting positive affirmation (as so-called Likes) leading to gameplay adaptation.

3.2 Middleware Architecture for Game Adaptation Support

The Game Adaptation is realized as part of the SoCom.KOM middleware architecture that supports game developers in using social media connectivity (metrics, profile data) and interactions (Konert, Göbel, & Steinmetz, 2014). Figure 1 illustrates the architectural design. Influence Types refer to content-type dependent instances of the influence patterns identified above (posting, voting, discussing, sharing), i.e. text-based or picture-based. The predefinition of the content-type used in the influence is necessary for proper upload provision and interface generation by the web-frontend of the middleware as well as for the game designer to know and decide which content-type is fetched as a result of the instantiated influence. Once an influence is properly configured (timeout, number of possible answers, pre-configured answers, options are user-extensible, etc.) it can be saved as a template to later spawn new instance of such influences easily and edit templates via provided API-methods centrally.

Figure 1: Architecture of Game Adaptation component in SoCom.KOM middleware, illustrating the communication between sub-components and between game, middleware and social media applications (most relevant parts are highlighted).
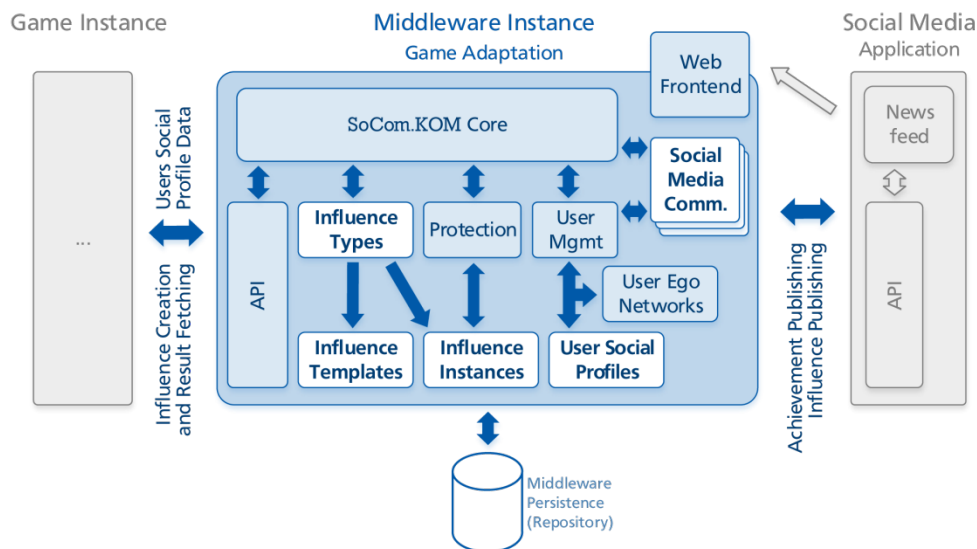
4. Implementation

The middleware components are implemented as Google Web Toolkit (GWT v2.5) Servlets with the corresponding web frontend for voting and content uploads running on a Jetty v8.0.3 servlet container. For persistency HyperSQL is used. All API-methods expect HTTP GET or HTTP POST requests and return their result as JavaScript Object Notations (JSON) including status messages and error codes. Currently Facebook[5] is supported as social media application. For publication of posts and media on the players' news feed a Facebook Application of SoCom.KOM requests the player on first start for granting access to the profile. By this, profile data can be extracted and provided to game instances asking for it and in the other direction the ego-network of the player in the social media environment can be notified about currently started and active influence instances to participate in.

For increased usability client-side interface stubs are provided for game developers to call API-methods locally without considering the establishment of HTTP connections and serializing parameters and objects to JSON format. Currently several clients are provided e.g. for PHP5, C#, C++ or the game engine Unity 3D.

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[5] http://www.facebook.com, accessed on 2nd February 2014

5. Evaluation

To evaluate the interaction types' acceptance by players and social media users, the evaluation uses a game prototype of single-player educational game for students of business administration subjects or young trainees of consulting companies. The prototype has been provided for the study by the game developer studio DECK13 from Frankfurt, Germany. As the adventure-like game prototype is not released yet, it may be called BizConsulter in the following. In brief, the player controls a character that is a trainee of a consulting company. In the game scenario the character has to step in for his ill mentor to assist a client company in getting an important loan from a bank. In several scenes the player has to find items, convince NPCs in dialogues to cooperate and collects information in order to prepare the material for a presentation to the bank (see Figure 2). The social media interactions (game adaptation) are published on Facebook and redirect users to a web-frontend of the SoCom.KOM middleware. The influences are used to let connected social media users personalize the name of the characters in the beginning of the game and let them comment and like posts of achievements from the game which results in more cooperative NPC dialogues in case enough affiliations (Likes) are contributed.

Figure 2: (left) Impression from game BizConsulter, (right) a published announcement of an influence users can participate in (here on Facebook). All texts are in German due to the evaluation setup.

5.1 Research Focus

To evaluate the experience and acceptance of the social game interactions, an existing game experience questionnaire (GXQ) of Göbel, Gutjahr, & Hardy (2013) has been extended by items to survey the interaction specific aspects. To conclude the usability of the game adaptation via interactions, both sides of the interaction are of interest: the game players' attitude and the Facebook users' attitude.
Precisely, the following aspects are investigated by questionnaire items:
1. Player's attitude towards posting of achievements and messages on Facebook
2. Player's attitude towards content-contribution and influence by peers
3. Peer's attitude towards posts of achievements (consistent with 1.)
4. Peer's attitude towards content-contribution and influences (consistent with 2.)

A complete table of all used questionnaire items is available online[6] for interested readers. Each item references here is based on three corresponding questions to be rated on a 10-point Likert scale.

5.2 Setup and Scenario

The evaluation was conducted between 17th June and 20th June 2013 with students from the Master's degree in computer science at Technische Universität Darmstadt, Germany. For privacy reasons the students were provided with newly created test accounts of the social media platform Facebook. Consequently, the evaluation was setup as a laboratory test with controlled conditions. The participants were randomly divided into three test groups:
A. Experimental group A first used the game (15min, Phase 1), filled in the game-related questionnaire parts (10min, Phase 2), then participated in the influences using the Facebook website (15min, Phase 3), and filled the social media related questionnaire parts (10min, Phase 4).

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[6] http://www.kom.tu-darmstadt.de/~jkonert/shared/docs/ 2014__Questionnaire_Items_for_Publication_SocialMediaInteractions_ECSM2014.pdf

B. Experimental group B complementary to group A first participated in the influences on Facebook (15min), then filled the corresponding questionnaire parts (10min), afterwards used the game (15min) and filled the game-related questionnaire part (19min).

C. Control group C used the game without any personalization, connection to Facebook or social influences (15min), filled the game-related questionnaire afterwards and answered as well the social game influence-related questions in a slightly varied, subjunctive variation to ask them how they would have liked such social media-based influences of game play.

For better result robustness the experimental groups A and B were subdivided in groups of maximum 4 members each that were evaluated in parallel. While the members of group A were playing, the members of group B were using Facebook and vice versa. To let them always see the events and wall posts of the others, these group members of groups A and B were made friends (connected) on Facebook in advance. Additionally, to allow a certain identification and recognition of the users, they were instructed to personalize their given test profiles by a profile picture and set their real first name.

5.3 Results

Overall, 70 students participated in the evaluation (10f/60m, age between 20 and 34) which were finally divided into 7 sub-groups in the experimental setup (A and B in sum 48 participants). The control group had 22 members. No items of the questionnaire were skipped.

A separate analysis of the questionnaire results of experimental groups A and B brought no significant or relevant differences. Thus, the order of experience (first game or first Facebook) had no significant influence on the rating results. In the following all results for experimental groups A and B were merged as Experimental group. In Figure 3 the items 1 and 2 concerning publication of achievements and the publication of invitations for influence participation are visualized. Likewise for comparison the corresponding results of the Facebook users are shown in Figure 4.
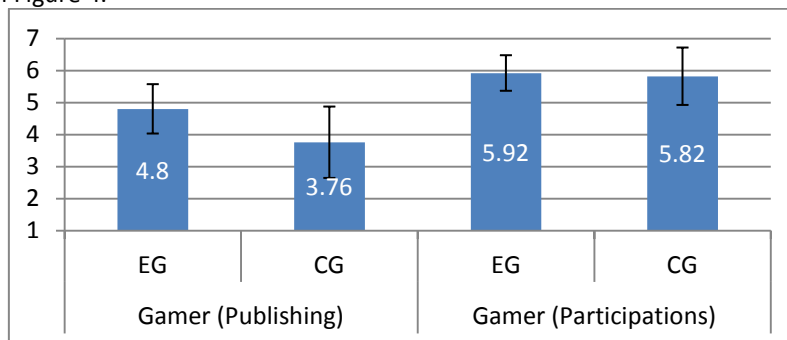
Figure 3: Results for players' acceptance of post by the game of their achievements (left) and the call for influence participations to Facebook peers (right). Control group (CG) answered to hypothetically formulated questions. Both results are visualized by mean value including 95% confidence intervals.
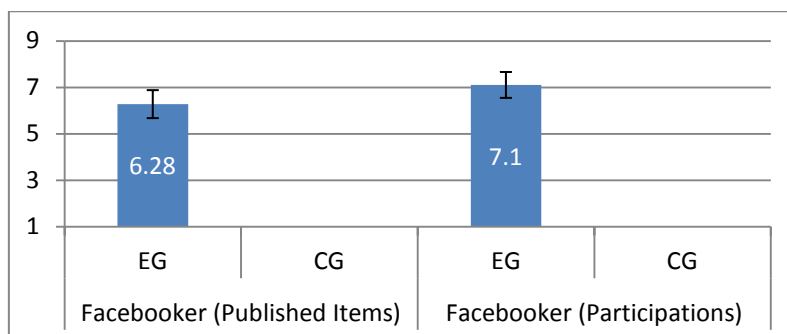
Figure 4: Results for players' acceptance of post by the game of their achievements (left) and the call for influence participations to Facebook peers (right). Control group (CG) remains empty as no hypothetical questions to the game players about Facebook usage were asked (as they were not connected to any social media profile). Results are visualized by mean values including 95% confidence intervals.

6. Conclusions and Implications for Social Media Interaction Design

As the average rating value on the 10-point Likert scale is 5.5 it can be concluded that in general participation via social game influence were positively rated and accepted by the gamers and the Facebook users. The social media users had even a slightly more positive impression (m_f=7.1 vs. m_g=5.92). Additionally, Facebook users seemed to appreciate the achievement posts (with screenshots) of their connected game players (m=6.28), but the gamers are ambivalent. Their rating is only around average (m=4.8), but still much higher on concrete experience than if asked hypothetically (m=3.76). This can be interpreted as a general great skepticism among participants towards publishing of game achievements, events or game status to a social media application while playing. Consequently it depends strongly on the experience itself and the way it is implemented and added to game play experience. Compared to this, nearly no difference can be seen in the gamers' rating of the participation possibilities for connected peers. Experimental group members and control group members rated this new social media interaction possibilities positively (m_{EG}=5.92, m_{CG}=5.82). The slightly higher value for the control group that answered hypothetical questions and did not experience the influencing from social media peers, can be interpreted as a higher expectation raised by the functionality as really was delivered with the prototypical implementation in the evaluation. No pictures, audio-files, videos or proprietary formats could be provided or voted by the participants. From this indicator and from the answers to open (text-field) questions it can be concluded that more extensive influence possibilities may result in higher ratings in following evaluations. Likewise, participants indicated that a summary or displaying of the current game context the asked content (influence contribution) is intended to be used for, could help in contributing more suitable (and creative) content from social media participants to the game play.

As a result, future research may focus on increasing the transparency to users where when and how information from the game is shared within the social media platform to respond to the skepticism towards such functionality. Additionally, further interaction types will be analyzed to allow more participation and deeper impact of interactions and participation. The long-term goal is to provide a multitude of interaction types and studies on the use of user-generated content created and contributed from the social media platform for the game.

In this relation, currently the game Escape from Wilson Island is extended by influence possibilities (Wendel, Gutjahr, Göbel, & Steinmetz, 2012). In contrast to BizConsulter it is a 3D serious multiplayer survivor game for team training and provides therefore possibilities to influence weather conditions, avatar constitution and item placement. Due to expected higher immersion and creative possibilities of social game influencing it is expected that a related evaluation will bring further insight into the possibilities of using social media interactions for increasing game play experience.

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Social Network Services as Fiction Generating Platform and the Rise of Social Media Fiction

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Abstract: Literature is a highly dynamic sphere that reflects values, social and cultural life. Social media has become the space where new literature arises and we are currently witnessing the rise of a new genre in literature: I propose to use social media fiction as a name for this genre. Social media fiction can be defined as a genre of literature transmitted through various Social Network Services (SNS) and is characterized by the use of the variety of tools in SNS such as tagging, immediate interaction with audience, communication between readers and fictional characters and general blurring the line between fiction and reality. These are not short stories as they are defined in traditional literary theory, this kind of short fiction is influenced and determined by the limits set by particular social media platforms. In the present research three subgenres of social media fiction are analysed: Twitter fiction, Instagram illustrated fiction and Facebook status fiction. Social media fiction encompasses the variety of new storytelling formats. Among them is Twitter flash fiction and drama, Twitter performances when the text appears at exact time on a regular basis, Facebook fictional statuses that question the borders of reality, Instagram photo-inspired fiction that uses the images of real people in fictional stories and many other forms that belong to the genre of social media fiction. In the core of the social media fiction is the act of communication that is a part of literary process. Blurring the line between real social life and fictional stories, storytelling in social media becomes a complex phenomenon that has to be investigated as an independent genre of literary creation. The creative potential of social media fiction is still not fully explored and tested by the authors but it is already clear that new formats of fiction in social media don't just make the storytelling process more interactive but also convey new meanings. The present paper combines the literary studies and social media research, as both the literary text and the act of communication following its publication in a social media network is analysed. Therefore, this research might be of interest for both experts in social sciences and literature studies. The present paper deals with the complexity of new literary forms appearing in the media within a traditional genre system and the influence of the social media environment on the rise and development of new forms in contemporary literature.

Keywords: social media, fiction, genre, literature, social media fiction

1. Introduction

Discussion about literary genres has occurred since the first literary works were written. Twenty-four years have passed since Tzvetan Todorov, in his work on genres in discourse, wrote that genres have faded away and a book no longer belongs to genres, but "stems from literature alone" (Todorov, 1990: 13). Texts that appear in social networks however don't stem from literature, but are the result of the act of communication. The discussion as to whether these written acts of communication belong to literature is still ongoing. Research on this topic quickly loses its relevance as new forms and formats of online literature constantly appear and old ones fade away. Social networks fiction could be classified as experimental literature as it keeps with the tradition of experimenting with different formats to convey the message. Furthermore, social networks fiction considerably extends the tradition of experimental literature due to the system of linking and immediate feedback from the audience.

For instance, blogging fiction was generally recognised as literature. One of the main reasons for this was that various online blogs were transformed into printed books (Miller and Shepherd, 2009). Paper still adds value to the content and usually no one denies that writing belongs to literature if it is published. Among the most popular blogging books are *Save Karyn: One Shopaholic's Journey To Debt And Back* by Karen Bosnak, *I Hope They Serve Beer In Hell* by Tucker Max, *Look At My Striped Shirt: Confessions Of The People You Love To Hate* by The Phat Phree, *The PostSecret* series by Prank Warren and many others. Therefore, "real", not "virtually" published books helped to classify certain blogs as literature. Moreover blogs are often unified by both narrative style and structure (diary format, short chapters, personal opinions of the author and other features) (Cooper, 2007). Of course, blogs don't form a single genre, but a multiplicity of genres and literature is undoubtedly one of these (Miller and Shepherd, 2009: 263) (Dumova and Fiordo, 2011), (Rettberg, 203). Today the discussion as to whether blogs could be considered literature already became historic as all the literary texts that are being published nowadays belong to the digital world (Gupta, 2009) (Bell, Ensslin and Rustad, 2013), (Siemens and Schreibman, 2013). If literature normally mirrors changes in society, digital fiction deals both with social transformations and software and hardware capabilities (Ciccoricco, 2012: 469) (Ricardo,

2009). In social networks, technical progress and new possibilities become less important as all social networking services deal with immediate contact with the audience and a tangled system of mutual linking. The links and feedback from the audience in the form of likes, shares, reposts, tags, and comments are not just reactions on the message but also become part of a literary text. Likes, shares and their analogues in Instagram and Twitter directly influence how the text is perceived by others making it more or less significant in digital discourse.

Literature that arises from the process of communication in social networks cannot be unified by stylistics, tone or content but it can be united by literary technique. A common literary technique or device for the literary texts that emerge in social networks is their focus on the interaction and communication between authors and audience whereby both direct and indirect communication is taken into account. Direct communication can be classified as interaction between the audience and the author, for example the author replying to written responses and comments from the audience following the literary text. Indirect communication can be classified as the silent signs of readers' presence: likes, shares, followers, links etc. Both types of interaction are able to influence how the story is being told, the tone of the author and even more the comments following the text can be a part of a literary text itself.

What distinguishes social media fiction is the absence of a mediator between the author and audience. When a Facebook page or Twitter account are used by an author's agent to promote his or her work and the author doesn't create new content, especially for the digital platforms, the audience immediately feels that the page or account is "fake". Such tweets, posts, or Instagram images do not belong to the new genre because they are not created in social network stylistics and do not take into account the act of communication between the author and the audience. The present paper is dedicated to the new forms of literary creation in three social networks: Facebook, Instagram and Twitter. The precise formats proposed by these social networks to express "what's on your mind?" tweets, or to share illustrated stories induces creative thinking. When the space for artistic creation is restricted the author has to dig deeper and find new solutions for the artistic creation. The building material for all social networks is still the words, but the meanings of the words that are placed in the social media frame transform.

The important question is who is able to classify the social network posts, statuses and tweets as fiction. The most evident answer is the author. If the author presents their writing as fiction it belongs to literature. It can be good or bad literature but it is a literary creation. For example, on Twitter, the author can identify their writing as literature by tagging it with certain hashtags: #vss (very short story), #fridayflash, #webfic, #weblit, #wrotetoday, #storycraft and many others. After the fiction boom happened on twitter, the agents and critics emerged to promote, publish and analyse twitter fiction. The formation of such infrastructure for twitter fiction is more evidence of the true nature of literary creations that emerge on twitter.

2. Literary Texts of Twitter: From Microfiction to Online Performances

Twitter was supposed to become a platform for quick sharing of information and thoughts. It appeared to be a perfect service for businessmen, journalists and other professional communities. Twitter format also became the frame for literary creation. The one hundred and forty symbols limit seems to be a severe restriction for literary work, but there are no limits for a creative thought.

Twitter fiction takes many different forms including: individual tweets as micro-fiction (nanofiction, twiction, twisters, tweetfic, flash tweets, sparkly stories etc.), collections of tweet blocks, an online act of storytelling, and the creation of literary characters to name a few. *Andrew Fitzgerald,* a writer, editor and Tweeter, defines Twitter as a new, wide opened digital frontier for story-telling and creative experimentation (Fitzgerald, 2013). Twitter microfiction was the first format of literary creation on twitter. Except for individual twitter accounts where one author places his or her own twitter fiction, there are a number of journals of twitter fiction with strict submission guidelines. In the statement of the Nanoism journal (@nanoism) that concentrates on twitter fiction only, flash twitter fiction is defined as "stories that move us with their writing, stories that stay with us longer than the few seconds it takes to read them." (Nanoism, 2009) Recent examples (December, 2013) of such stories include:

> *"I'm not where I should be. The woman beside me is dead. The paramedics try to save my body whilst my mind works on. What will the wife say?" (Redfern, 2013)*

> *"He Duct Taped forty-seven rockets to an old lawn chair.*

> *"Just like in that movie," he shouted. "'You want the moon, Mary?'"*
>
> *Mom kept packing." (Norton, 2013)*

There are also examples of twitter fiction magazines that specialise on a certain genre. For instance, the Trapeze journal (@trapezemag) publishes "science fiction, horror, fantasy, speculative or surreal" stories. No mainstream literature" (Trapeze, 2013) while another twitter fiction journal Cuento (@CuentoMag) specialises on mainstream and literary micro pieces (Cuento, 2013). Among the examples that would be appreciated, the Cuento editorial board gives the following pieces of twitter fiction:

> *"She opens the door and invites him in. He's spreading the word of God. She has other plans that involve chocolate mousse. (Mark Connors)*
>
> *Turning her back and shutting her eyes under the sheets, she wished her side of the bed was an island, miles away from her husband. (Debbi Antebi)*
>
> *Monsters prowled the streets, buying newspapers, waiting for the crosswalk, paying for parking. Only tourists screamed and ran. (Derek Dexheimer)" (Cuento, 2012).*

The literary process on twitter is already occurring and editorial boards of the journals of twitter microfiction have formulated criteria to evaluate the twitter fiction. The authors convey the messages through the "nanotexts" and evoke the readers' emotions. Even though many of the twitter fiction examples resemble the exercises in writing, there are texts that certainly reach the flash effect, where with one sparkle they set on fire a range of emotions in the reader.

Another form of literary expression on Twitter is a series of tweets that afterwards transforms into a short story of classic length but broken into twitter blocks. The most known story of this type is the *Black Box*, a science fiction short story by Pulitzer Prizewinning American writer Jennifer Egan, published in The New Yorker magazine in May 2012. The story was released in a Twitter format as a series of tweets on The New Yorker's Twitter account over nine days beginning May 25, 2012. The entire story was told through the tweets and every night at eight o'clock, followers of the New Yorker Fiction Twitter account (@NYerFiction) could watch how the story was developing. Story-telling online is not just a literary text; it is a performance when the story is being created line by line (in case of Egan's short story the new tweet was posted on Twitter every hour during the whole night in 10 days). Therefore, a reader has the choice to read the entire story afterwards when the night performance is already over or to tune into the story at the precise time and read it box by box becoming a participator of a live show. While an art performance normally aims at having immediate effect on the audience, the main goal of twitter fiction performance by Jennifer Egan is still the final text. At the same time the readers can get access to the New Yorker magazine and read the entire story written in tweet blocks (Egan, 2012).

Another approach to writing literature through Twitter was first applied by Elliott Holt. Holt extensively used the technical possibilities of Twitter format by managing several accounts of fictional characters to tell her mystery story (Holt, 2013). In traditional published fiction the author often divides the text into chapters to write the direct speech of different characters. To reach the same effect Holt used the Twitter possibilities to express thoughts of different characters and to show the story from different angles, creating a flexible identity of the author. In this case, Twitter enabled the multiple perspectives of a single story without any need for changing the structure of the story. Such an approach opens a wide range of possibilities for story telling from multiple perspectives. Holt created several fictional characters responding from different Twitter accounts. This type of storytelling can be considered as Twitter drama. Due to the Twitter format Holt's mystery story gave the impression of a real event, taking place in New York, thus blurring the border between fiction and reality.

More evidence of the significant role of Twitter fiction in the modern literary process is the Twitter Fiction Festival, an online event first launched in 2012 that aims to bring together storytelling projects that make creative use of the platform. The Twitter Fiction Festival in 2014 is being held in collaboration with the publishing sector, supported by the Association of American Publishers and Penguin Random House (Abrams, 2014). The judges of the Festival are a "carefully selected group of publishing professionals—editors, marketers and more from all sides of the industry" and the criteria for selecting the official participants is "based on creativity, unique use of Twitter functionality, and writing talent". (@TWFictionFest, 2014).

Other forms of story-telling on Twitter include parody accounts (just search Twitter for names of politics, writers, fictional characters and you will find parody accounts from all over the world from Leo Tolstoy to Rahm Emanuel), collaborative fiction (when several authors work together creating a single story), stories integrated in images, poetic flash twitter fiction and stories managed and written from multiple accounts (see Elliot Holt's *mystery*). All these forms are very different: they appeal to different emotions, their target audience is different, they convey different meanings and messages and they are heterogeneous in style and language use. However they can be unified into one genre based on their creative use of the Twitter platform and the fact that they all go beyond the traditional and even beyond the experimental literature. Twitter fiction, which is now in its formative stage, belongs to postdigital fiction, where both technical possibilities and a powerful creative approach to using them create new meanings.

3. Facebook and Instagram Fiction as a Space Between Real and Fictional

Facebook has less flexibility to go beyond the digital space and make the act of communication itself a part of a literary text. The creative use of Facebook is limited with the requirement not to use fake names (Facebook , 2013). This restriction makes many of the previously described formats available on Twitter such as collaborative stories, multi-perspective stories, online drama, and real fiction stories (when historic events are represented in form of chronological tweets) impossible. But what is interesting and new about the Facebook and fiction relationship is the shift from reality to fiction. The point when a Facebook status transforms into fictional writing, when an author is perceived as a writer and not just as a Facebook user who describes his or her own life experience, is unclear. The blurry line between a writer that posts fiction as status updates and Facebook users who posts updates about their personal life can be clearly seen in the profiles of well-known authors. For instance, one of the most well established writers of modern Russia, Tatyana Tolstaya, posts status updates that could be considered both fiction and personal experience, but the stylistics of most of them are very similar to her published novels. The tone of her statuses is absolutely literary. At the same time many of Tolstaya's followers on Facebook tend not to spot the line between personal and fictional. For instance in November 2013 Tolstaya updated her status writing a short story about New York. In particular she vividly described an episode in the cheese department of a grocery store and the dialogue with a sales assistant and a cashier (Tolstaya, 2013). The story was highly metaphorical but still the author got a lot of comments from her followers asking her to name the kind of cheese she described and even for the exact address of the grocery mentioned in the text (Tolstaya, 2013). Tolstaya reacted to the comments with the following status update:

> *"On cheese*
>
> *Dear citizens and friends, why do you ask me to name the exact kind of cheese? You are reading the text, not the cheese. You like/ dislike the product of my imagination, not a product of milk fermentation. There is no cheese; there has never been a cheese. Relax. This is called literature.[1]"*
> *(Tolstaya, 2013)*

This episode illustrates the complex phenomenon of using Facebook for literary production and the conflict in the perception of the status updates as personal information. This is problematic for writers who tell their stories in a realistic genre. In spite of this Facebook remains a successful platform for blogging and literary processes on Facebook are quite similar to those that can be seen on various blogging services.

Facebook also has more technical possibilities than traditional blogging platforms like livejournal.com or wordpress.com. Even though Facebook official policy restricted the creation of fake names without indicating that it is not a personal account (Facebook , 2013), there are still fictional pages that can be considered as personal. Among the recent examples is a project developed by Steve Lowtwait and Michael Smith, an illustrator and a writer. This tandem team is telling a fictional story through Facebook by creating profiles of the story's characters. The protagonist of the story, Hawk Funn, has his own Facebook page where he introduces himself as a Public Figure who lives at Camp Funn with his family (Funn, 2013). The authors have also created Facebook pages for Hawk's wife, children and his best friend. What is interesting about this

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[1] Translated from Russian by Eugenia Kuznetsova. Original Russian text:

О СЫРЕ

Граждане и друзья, зачем вы просите меня сказать, какой именно сыр? Вы не сыр читаете, вы читаете текст. Вам нравится/не нравится продукт моего воображения, а не продукт молочного брожения. Никакого сыра нет и не было. Расслабьтесь. Это называется литература (Tolstaya, 2013).

project is its interactivity: anyone has a chance to communicate with the fictional characters and even influence the plot of a story. Even though the story is more about marketing a certain project than about literature itself, it perfectly illustrates the possibilities of social media fiction phenomenon on Facebook.

Instagram is another successful platform for social media fiction with many possibilities for tagging, linking and communicating. There is even a novel completely told via the photo-sharing site (Gone, 2013) and various examples of short stories that are longer than Twitter nanostories, but still considered flash fiction. Yet the most thought-provoking subgenre on Instagram is photo-inspired fiction where the images of real people are used. This photo-illustrated short fiction on Instagram questions the borders of reality when Instagram users post real photos to their feed accompanied by a short fictional text. Random real people (or their images) thus become the protagonists of fictional stories. This subgenre combining photo hunting and storytelling can be found on Instagram following the #realpeopleinfictionalstories tag.

Figure 1: Screenshot of photo-inspired fiction on Instagram (@randomstrangers, 2013)

The ethical aspect of this kind of social media fiction is still unclear: strangers are getting involved in literary process without their permission and are treated as imaginary, fictional characters even though they are actually real people. Taking photos of strangers is a popular trend on Instagram, but writing stories illustrated with photos of real people is something new for both social media and literature. Photography in this context is more powerful than traditional illustrations; it integrates the real places and figures into fictional context, making these Instagram projects the space between reality and literature.

4. Conclusion

The place of social media fiction within a traditional genre system is still to be defined, but the recent developments in social media literature and the rise of a number of storytelling formats prove that social media fiction is a self-sufficient genre of literary creation. Social media fiction undoubtedly belongs to the literary process and is able to produce meanings by using technical possibilities and new formats of interactive storytelling. When the reader becomes a participant of a fictional story and barely knows where the reality ends and the fictional world begins, their perception of the messages being conveyed through the text also changes. By blurring the line between real people and fictional characters authors involve independent participants to the literary process, making the established communication between reality and literature part of the imaginary world and vice versa. Such possibilities are still not fully explored and tested by the authors but what is clear for now is that new formats of fiction in social media don't just make the storytelling process more interactive but also convey new meanings and give literature new functions in social processes.

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The Digital Age: A Challenge for Christian Discipleship?

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Abstract: In the twenty-first century churchgoing is no longer the 'cultural norm' for many in the UK. People don't actively ignore the church: they don't even think about it. For churches, websites and social networks such as Twitter, Facebook, YouTube and Pinterest have now effectively become the 'front door' to billions of digital users. As Sara Batts research has shown us, many churches are finally starting to get that the online landscape is important, but still need convincing that something more radical is needed than a new website, as opportunities have arisen to embrace a more social ministry, where to 'love your neighbour' may include those from anywhere in the world. The 'digital age' brings the opportunity for a wider range of voices to contribute to conversations: many online will engage with 'church' through their friends rather than formal Christian organisations. In 2010 'The BIGBible Project' emerged to encourage those at all levels of the Christian sector to engage with digital culture, and to consider what this means for Christian communication practices, in a culture in which messages are both ephemerally 'in the now', and perpetually available. Technologies have changed what is possible, and for many churches over the last few hundred years a model of passive, presentation-piece services has been adopted, heightened even more by a broadcast mode of media that we all got used to with the TV and the radio. Social media, however, offers much more space for questioning, and for congregations to actively engage with sermons through tweeting along, checking something on their online Bibles or Google, sharing photos of church activities, or being encouraged to continue discussions hyper-locally throughout the week through a Facebook group. The BIGBible Project emphasises that disciples live at all times for God, whenever and wherever, and therefore all Christians need to take seriously their presence both online and offline. This paper will draw from over 2,000 contributions made to the The BIGBible blog, where over 120 Christians from across the ecumenical spectrum have contributed thoughts as to how discipleship is affected (and can affect, particularly, behaviours) in the digital age and the digital spaces.

Keywords: Digital Age, Cultural Practice, Discipleship, The Church, Participation, Communication Practices

1. Introduction: The Digital Revolution

A popular concept is that we are now in 'The Digital Age' following 'The Digital Revolution' of the late twentieth century. For some technology and technological developments are defined as the key agents in history and social change. Vogt (2011:15) notes that in the fifteenth century, when Gutenberg developed the printing press, he influenced not only what Christians communicated but how. Through Gutenberg's invention, religious texts were quickly produced, copied, and disseminated across the world. This shifted the focus of Christianity from listening to reading, from the community to the individual, and from concrete images to abstract theology. McLuhan (1964) famously emphasised 'The Medium is the Message' - placing the main importance of a message in its medium or means of conveyance rather than its content. This paper is keen to avoid such notions of pure technological determinism, as technology is certainly not the only driver of change: factors such as culture and the economy also need to be considered. Digital technology is addressed more within a framework of affordances and constraints (following Gibson, 1977): what does each new development in technology make possible, what does it limit, and what choices are therefore available? Dyer (2011: 25) offers caution for modern day disciples: "Technology should not dictate our values or our methods. Rather, we must use technology out of our convictions and values."

1.1 Christians and Churchgoing

In the twenty-first century churchgoing is no longer the 'cultural norm' for many in the UK. Sunday trading and weekend sports have provided alternative activities for large numbers. People don't actively ignore the church: they don't even think about it. The most recent census data from England and Wales highlighted that Christianity remains the major declared religion: 33.2 million (around 59%) (ONS, 2011). However, around four million fewer identified themselves as Christians than in the 2001 census. Rev Arun Arora, director of communications for the Archbishops' Council, said that one explanation may be that fewer people identify as "cultural Christians" – those who have no active involvement in churches, but have by tradition defined themselves as Christians: "They indicate a changing pattern of religious life in which traditional or inherited identities are less taken for granted than they used to be." (Booth, 2012)

An extensive survey undertaken by Tearfund in 2005, where changing notions of what constituted a 'churchgoer' were discussed, and an increase in identification as 'spiritual' rather than 'religious' acknowledged (Ashworth & Farthing, 2007). The difference between Sunday observance and active Christian

faith was also touched upon: the author of this paper is an active Christian in all spheres of life (including digital), member of a weekly housegroup, and attends regular midweek services, but would not count for the purposes of church attendance surveys. Recent research by Goodhew (2012) demonstrates that although the consistent narrative in the media regarding Christianity in Britain is one of decline, there has also been significant and sustained growth, across a wide geographical range, and across a range of cultures.

As a sector the Christian faith offers an interesting case study of how longstanding faith groups are dealing with the challenges presented by the digital age, institutionally and individually. For churches, websites and social networks such as Twitter, Facebook, YouTube and Pinterest have now effectively become the 'front door' to billions of digital users. As Batts research (2013) has shown us, many churches are finally starting to get that the online landscape is important, but still need convincing that something more radical is needed than a new website, as opportunities have arisen to embrace a more social ministry, where to 'love your neighbour' may include those from anywhere in the world. As Barley, Head of Research and Statistics for the Church of England, noted for the Tearfund report (Ashworth & Farthing, 2007):

> *Mission opportunities are very different when to step over the church threshold is an unknown experience compared with attitudes when there is a known church to which they can return.*

1.2 The Growth of the Internet

The OXIS Internet Survey, undertaken bi-annually, demonstrated in 2013 that the use of the Internet is Britain has risen substantially since 2011, reaching 78% of the population aged fourteen plus, with 67% of users working on multiple devices, including mobile, and 61% regularly involved in the use of social media (Dutton & Blank, 2013). One particularly noticeable piece of headline data was that the Internet and social media complement, rather than substitute for, "traditional forms of communication", but is a space in which traditional social interaction, including meeting new people, occurs.

The London Institute of Contemporary Christianity (LICC) started a project in 2003, which focused upon the making of "whole-life disciples who live and share the gospel wherever they relate to people in their daily lives." Daily life for many includes the social networks. In early 2014, statistics highlighted 31 million active UK users on Facebook, 15 million on Twitter, 10 million on LinkedIn, 2 million on Pinterest, and significant numbers on other platforms (McGrory, 2014). These social media platforms are all highly interactive, although few users appear to be wedded to a particular channel, more concerned with where their friendship base has congregated (which can move), and the content that is to be shared. The numbers online are across the age range, with a significant proportion of the newest signups to Facebook identified as grandparents keen to connect on a more regular basis with their grandchildren. Many still see the digital spaces as the enclave of 'digital natives' a term Marc Prensky popularised in 2001, referring to those who had grown up surrounded by technology. As Lewis (2014: 62) writes:

> *A more useful idea has developed from a team at Oxford University led by Dave White: that of the "digital resident" and the "digital visitor", defined more by attitude than by age. "Visitors" use the internet as a tool: go in to complete a task, and leave. "Residents" regard themselves as members of communities that exist online, rather than having access to an online toolbox. I am most definitely a digital resident, though I'm far too old to be a "digital native".*

2. Understanding Digital Culture

With such significant numbers using these digital spaces, it is important that the church seeks to understand and engage with the online culture. This is not an entirely new issue: Campbell (2012) gives an overview of the development of what she terms 'digital religion' since the early years of the Internet, alongside which we get a sense of the relatively new interdisciplinary study of religion and media within academic contexts. Sharon Watkins is quoted in Dresher (2011: 108): "God never told the world to go to church; but God did tell the church to go to the world." Consider how this fits with part of the mission statement of the Fresh Expressions movement (Cray, 2009):

> *Those starting churches must do so from within the cultures they are trying to reach … so that those who respond face only the challenge of Christian faith … and not that of having to adopt a foreign church culture. Such new Christians are thus able to remain within their own culture as change-agents.*

As the church has previously sought to understand overseas cultures, for the purposes of both discipleship and mission, so now it seeks to engage with digital culture – a space where many spend a considerable amount of time daily. Pope Benedict XVI put it this way (2013):

> *The digital environment is not a parallel or purely virtual world, but is part of the daily experience of many people, especially the young. Social networks are the result of human interaction, but for their part they also reshape the dynamics of communication, which builds relationships: a considered understanding of this environment is therefore a prerequisite for a significant presence there.*

2.1 Relationships and the Communication of Faith

Rev Prof David Wilkinson noted at a media literacy conference in 2010 that "God is extravagant in communication – he is not a silent God who has to be tempted into communicating with people – he wants to share his word with us." The 'digital age' brings the opportunity for a wider range of voices to contribute to conversations: many online will engage with 'church' through their friends rather than formal Christian organisations or formal church leadership. Social media, if we concentrate on the word 'social', rather than 'media', is at its heart about relationships and communication. Rev Prof Maggi Dawn noted at the inaugural 'Christians in New Media Conference' (2010) that it can take some time for online users to grow comfortable in their 'voices', something that Rev Robb Sutherland (2013) describes as becoming comfortable in a 'digital skin' that was consistent with his physical presence. Heim and Birdsong (2010, 12), authors of StickyJesus would argue that the Bible gives Christians a model of 'social networking and the importance of community', drawing on Matthew 5:14 to argue that God has entrusted believers with (social networking) circles of influence, in which Christians can impact on 'cultural, social and political issues, world events, personal struggles, and issues of morality that a global culture all but shrouds'. They also showcase the Apostle Paul (1 Corinthians 9:22-23) as mission-centric, respecting and adapting to the culture in which he found himself, rather than imposing himself upon it.

Building relationships takes time, but church would argue that it has never been about "bums on seats", so much as about encouraging those who attend to live full lives of discipleship, seeking to bring people back to their connection with God by encouragement and example (Smith, 2014). Many of those who enjoy the digital spaces are skeptical about being 'preached to'. We live in a world of "pull" rather than "push" media (show me why I will be interested, rather than tell me I should be interested), but as Drescher (2011, 127) from Santa Clara University says:

> *We are not selling something to the world that will make more people like us, believe in our story, join our churches. We are trying to be something in the world that invites connection and compassion, encourages comfort and healing for those in need, and challenges those in power to use that power in the service of justice and love.*

Gould (2013, 11) would agree that "Social media has opened up yet another portal for seeing and being seen, for knowing and being known, for being in and belonging to community," offering opportunities for enhancing what already exists, rather than replacing it with something completely new. Byers, theological consultant for The BIGBible Project (2013: 196), notes that if we ourselves are the

> *means by which God communicates and reveals himself through his Spirit, then our blog posts, status updates, tweets, artistic images, and online comments should be products of a life transformed by Christ and indwelled by his Spirit. As restored image bearers, our online presence and activity should image the Triune God.*

At the core of this is the importance of a consistent message, embodying an unchanging God, as Byers (232) finishes "nothing would be more irrelevant to the world than a relevant church that is competent with digital media but inept with the media of God." Vogt (2011: 15) agrees that each new technology offers new opportunities for mission (deeply tied to discipleship), but the basic message of Christianity remains the same.

2.2 Online Mission

As demonstrated in early findings from Bryony Taylor's unfinished BA dissertation research (2014), 63% of 300 respondees had been asked questions online about their faith, or about God. A significant amount of this questioning (45%) was via private messaging, and therefore in spaces where a relationship of some trust had

been established both ways. This echoed a post from Emma Major in 2012, where a friend said to her: "Christianity seems safer online; I can ask the questions without having to look stupid for asking them." Emma noted that

> *It's something about the informality and distance; the ability to pause and think, which can be difficult in a conversation; and the way discussions can pick up where they left off several hours, days or weeks later.*

In removing the power and knowledge associations with a physical church practice, people felt comfortable to ask about Emma's clearly lived and stated (but not overtly evangelistic) faith. In a 2012 survey by Christian Vision and Premier Christian Media, only 9% agreed with the statement that "the gospel message is too deep to be properly shared online", with 65% intentionally sharing their faith online. (Skinner, 2012)

3. CODEC: Encouraging Discipleship Online

The CODEC research initiative based at Durham University has created a number of schemes to encourage Christians to develop their own discipleship and share their lives digitally. CODEC developed from The National Biblical Literacy Survey (2009), where it was evident that knowledge in the Bible had declined (both within and without the church) with fewer than one in 20 people able to name all Ten Commandments. In 2010, the people of the North East got together for 'The Big Read 2010', using the first of a trilogy of books by Bishop Tom Wright over Lent. CODEC saw an opportunity to allow this to go national and national, and in 2011, The Big Read 2011 offered the opportunity to read the printed text (from the book, or online) individually or as part of a church housegroup, but also to contribute to 'bigger Bible conversations' online. Hutchings, in a 2013 overview of means to encourage more Bible reading, noted that as with other disciplines that are good for overall health and wellbeing, reading a Bible with others in community was the most likely to give readers new motivation to explore the Bible, but that the use of social networking for this was still relatively rare. Numbers downloading the Big Read resources are large, feedback is positive, but online community engagement was slow. With many identified as lacking digital confidence, so 'The BIGBible Project' was created as it's parent to engage more with digital thinking and training, with over 140,000 unique visitors in the lifetime of the project so far, with others engaging via other social media platforms. There is clear evidence that online conversations have led to a range of offline conversations and collaborations.

3.1 Discipleship in a Digital Age

Disciples keen to engage modern culture need to understand how to exist in, listen, read, and speak into the digital age: being immersed in the culture, but also acting as a change agent within that culture. Strong similarities can be seen with the experience of e-learning advocates in higher education. As Lewis and Rush (2013) highlight, these are often innovators working at the edges, seeking to get the topic on the agenda in central areas of discussion, or encourage large groups to actively get involved. CODEC in recent funding bids has identified that 2014-2019 is crucial in the Church's engagement with this digital revolution, in order to develop the capacity of the Christian community to communicate an ancient faith effectively in the digital environment.

In 2011, The BIGBIble Project invited a number of Christians to become #digidisciple(s): those who seek to live out their Biblically-informed Christian faith in the digital space, exploring both what it means to be a disciple in the digital age, and also how the digital age affects or alters discipleship. The aim is to encourage and equip those from the pew, the pulpit and the academy to engage, and over 120 people have contributed so far. From January 2013 to June 2018 #digidisciple(s) are drawing upon each book of the Bible in turn, having started with Genesis, encouraging writers to think how engagement in digital media draws upon lessons from the Bible. #Digidisciple(s) have written on a huge range of topics, including tweeting in church, legal and ethical questions, reviews of the latest scholarship, demonstrating graceful communication, thinking before tweeting, the importance of listening, undertaken a digital pilgrimage, relationship development online, authenticity, drawing upon best practice in the secular world, the use of language, attitude, and wellbeing – including taking digital time out. Overall, the group explores how digital practices and values (e.g. social, always-on, immediate, responsive, iterative, accountable, avatar use) contribute to contemporary discipleship and how discipleship values (e.g. authenticity, integrity, discernment) shape the digital environments that are engaged with.

3.2 Fears and Moral Panics

The author has worked within the Christian digital sector for four years, and has seen the question change from "we're so busy, why would we want to engage with that?", to "we understand we need to do it, but don't understand how", leading to strong uptake for a Church of England course 'Social Media for the Scared'. Anecdotal evidence supports Baym's (2013: 1) findings that when new forms of communication are introduced, people either feel that personal relationships are under threat as communication becomes increasingly shallow, or excitement is felt as opportunities for newer and stronger connections is felt. Either way, our social connections are changing in a digital age.

Particular fears noted related to digital engagement taking up hours of time, placing content into a space that is both ephemeral and permanent - and which may come back to haunt users, privacy concerns, tipping the work-life balance over, a loss of control over broadcast communications, and for some, a fear of being open about their faith in an increasingly secular society. Workshop delegates are reminded that content shareable in other media could also have been recorded and shared. The Methodist Church has commissioned research from CODEC into the areas of privacy, anonymity, ethics and live digital engagement whilst in a physical meeting: all topics that affect the daily lives of its members.

3.3 Sharing Whole Life Discipleship

The churches natural style fits the pattern of the social media world - that of participation and creativity rather than a broadcast hierarchical structure, although many churches have grown used to a model of passive, presentation-piece services over the past couple of hundred years, heightened even more by a broadcast mode of media that all have got used to with the TV and the radio. Members of the congregation physically present can engage with sermons through tweeting along, checking something on their online Bibles or Google, sharing photos of church activities, or reflecting upon the sermon with live blogging (something that many have done for years in paper journals). Moreover, digital communication allows for communication with those we cannot speak to already. It allows us to break out of the same old voices feeding into our worship. Guest speakers can be invited from all over the world (using tools such as Skype); the housebound can be invited to *both* enjoy *and* participate in church services (using tools such as live streaming). People can request and be offered prayer, whenever and wherever it is needed, notices can be texted out, offerings given through digital banking, and share the fullness of discipleship living through all kinds of media. People are no longer limited to their geographical or 'Sunday' lives, which allow churches to practice whole-life community, actively engaging with what is going on in the world, to listen and to respond with what is going on in local, national and international communities in ways that are meaningful to those who are listening.

Jennifer Fulwiler (in Vogt, 2013: 45-53) writes of her experience growing up in a culture where a worldview of non-belief was considered the norm, with known Christians appearing simplistic in theory and lukewarm in practice. In the early days of blogging, she discovered thoughtful and educated Christian bloggers who challenged her fixed thinking through their colourful daily lives, challenging her worldview. She has since come across Christian bloggers who are caustic, sneering, and dismissive, which effectively closes the door on communication for others. The Internet more commonly has a reputation as an echo chamber, with a heavy emphasis on self-promotion. Turkle (2011) refers to 'photoshopped selves' that we produce online – a deliberately created self in which we share only those things that make us look good, or part of a crowd. We have to argue, however, that we exhibit different 'social selves' in different situations, and the online environment is simply another social situation in which we are learning what is appropriate to share, and what would be better reserved for a different social situation or a different technological medium, with questions as to whether the convergence of digital media is making it harder or easier to be 'digitally in disguise' and how easy it is to wear our 'digital skin'.

If Christians are seeking to be strong representatives of the Christian faith, then aspects of their daily living in a digital space will come under scrutiny – words and actions. Hutchings (2013b) questions how theologically and ethically we figure out what is right or wrong with regards to piracy in a new cultural context, and how Christians should address this question to encourage more ethical behavior online. In a previous post, commentators had noted that the line from the pulpit typically drew upon Bible verses such as Exodus 20:15 (Do not steal), and Mark 12:17 (Render unto Caesar), which supports rather than challenges the interests of big business, when more creative approaches could be encouraged.

3.4 New Opportunities for Sharing

Because faith has become an integral part of full lives, rather than one section to be pushed aggressively into a 'Godslot', or with random verses unaccompanied by personal comment (Hill, 2012), those who engage with Christians digitally are open to asking more questions about faith. Phillips et al (2013: 6) would emphasise that "being digitally engaged means we needs to be ourselves, be interesting, be relevant, and be honest. If people come looking for that message and we're not online, what are they going to find instead?". In a world where the church seems daunting and unapproachable, the relationship feel that Facebook gives is really important. David Keen, a vicar in Yeovil, offered a community Facebook chat (2013) because he felt that "the church has often been accused of answering questions nobody is asking", and this gave an opportunity to be asked 'real' questions in an interactive, rather than a broadcast, way.

The answers didn't need to be 'right', but the participants needed to feel listened to, and that they could relate to the conversation on their own terms, rather than as subjects of an evangelistic agenda:

> *On the Emmaus Road, Jesus was recognized in the breaking of bread rather than in the exegesis of Scripture. That's an intriguing lesson to learn when so much of the web and so much of digital communication is about proclamation rather than reception. (Phillips et al, 2013: 10)*

Disciples who are being open about their faith online need to have the confidence to be able to share what they believe, and fulfill the scripture from 1 Peter 3:15 "Always be prepared to give an answer to everyone who asks you to give the reason for the hope that you have. But do this with gentleness and respect,…" Pope Francis drew on the passage about the Emmaus Road on World Communications Day 2014, defining 'effective Christian witness' as being available to answer questions and engage with doubts whilst people are searching for the meaning of human existence, rather than bombarding people with broadcast messages. He also emphasized that "We should not overlook the fact that those who for whatever reason lack access to social media run the risk of being left behind," with a reminder that communication is ultimately a human rather than a technological achievement.

4. Conclusion

Much has changed, but much remains the same, and without previous communications developments we wouldn't use contemporary media in the way that we do. Discipleship is as much about belonging as much as about believing or behaving. A significant number of Christian disciples are in the online spaces, with concerns about Christian presence online – how we are impacted, and how we can impact – with theological questions of 'being', and more practical questions related to ethics and practice. The digital age offers a wide range of voices from the pews, the pulpit and the academy to contribute to these debates.

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Using Social Media to Promote Local Culture and Development – Patzun Case Study

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Abstract: This paper presents a case study in implementing a social media e-Government strategy by a rural government – the government of Patzun municipality in the Chimaltenango department of Guatemala. An agricultural municipality of 54,000 habitants located in the interior of Guatemala, Patzun is populated in 94% by indigenous Maya Kaqchikel population. The aim of the strategy is to use social networks to inform the public, encourage citizen participation, promote transparency and raise visibility for the community locally, nationally and internationally. The strategy includes YouTube video channel, photo collection on Google Plus and Pinterest, and a Facebook page, all promoting local culture and socio-economic development. The strategy received the first prize of the Iberoamerican Digital Heritage Award at 14th Latin American Meeting of Digital Cities in Quito, Ecuador in September 2013. In addition, the implementation of the strategy was recognized as a best practice by the Organization of American States' MuNet Programme which promotes efficiency and transparency in local administration. This paper summarizes the experience of the implementation of the Patzun e-Government strategy for leveraging the use of social media. The experience includes: implementation challenges - changes in government due to electoral cycles, buy-in from government staff and support from the central government; success factors - political commitment granted by the Mayor and City Council, regulatory framework underpinning the strategy, teamwork, content licensing and full utilization of existing tools; and the lessons learnt - there is a strong need for rural governments to leverage the use of social media to communicate with citizens, a dissemination plan embracing available software tools should be defined, and multi-disciplinary team should be assembled for efficient strategy implementation.

1. Introduction

Patzún (Wikipedia 2013) is a city in the interior of Guatemala at the Kaqchikel region known for its agricultural potential - 95% of its population live on the export of vegetables to the United States of America (USA), Canada and Europe. From its 54,000 citizens, 94% is aborigine population of Mayan Kaqchikel ethnic, and the remaining 6% is Ladino or mestizo population, keeping their own cultures and traditions. 60% of the population lives in 42 villages and hamlets, while the rest lives in the village and some cantons formed by colonies. The population remains in their home communities and villages because the source of their incomes comes from the farms. However, the youth leave their communities to study or to seek better job opportunities. In terms of migration, there have been movements only to the USA (illegal) and to Canada (through permanent contracts).

In 2007, the former Mayor, governing from 2004 to 2011, was invited by the Organization of American States (OAS) to join the MuNet e-Government Program - Efficient and Transparent Municipalities (Organization of American States 2007). The Program promoted the definition and implementation of Electronic Government (e-Government) strategies aiming at improving municipal management, enhancing government communication with the public and encouraging citizen participation. Following the invitation, the Mayor launched the MuNet Programme, which includes defining and implementing the social media e-Government strategy.

Based on the Patzun experience, this paper presents a case study about the use of social media to promote culture and development in a rural community. It illustrates how the implementation of the social media e-Government strategy contributes to disseminate and promote Patzun culture – e.g. promotion of Patzun traditions, like handicrafts and religious celebrations; as well as to promote socio-economic development – e.g. improving citizens' e-skills, promoting their products and raising awareness about their needs among international aid organizations.

The rest of the paper is structured as follows. Section 2 describes the research methodology. Section 3 introduces five initiatives implemented as part of Patzun social media e-Government strategy. Section 4 compares Patzun experience with other cases and related work. Section 5 discusses the challenges, key success factors and lessons learnt. Finally, conclusions are summarized in Section 6.

2. Research Methodology

Two research questions guided the work presented in this paper: 1) how did Patzun implemented the social media e-Government strategy?, and 2) why the implementation of the strategy can be considered successful? To answer the questions, a case study-based research approach was conducted, since Patzun experience embodies a representative case (Yin 2009). A data collection process identified and gathered data about the initiatives. Five major social media initiatives include: 1) the online government portal, 2) the video channel, 3) the photo albums, 4) fan page, and 5) boards. The initiatives were documented based on a conceptual framework including the following constructs: 1) aim, 2) launching date, 3) supporting tools, 4) target audience, 5) content, 6) staff, 7) usage statistics and 8) development plan. Data was collected based on the insights of one of the team members implementing the strategy – the ICT advisor. The documentation of the collected data contributed to answer the first question (Section 3). Based on data analysis and comparison with related work (Section 4), challenges, key success factors and lessons learnt were identified. Results helped to address the second question (Section 5). The research methodology is shown in Figure 1.
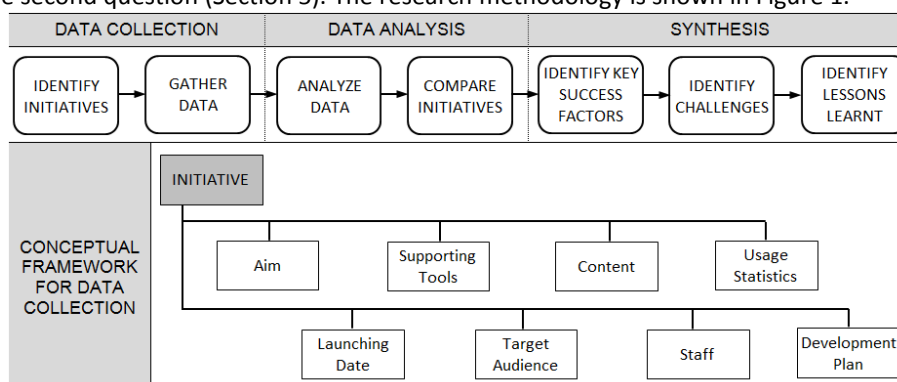
Figure 1: Research Methodology

3. Patzun Case Study – Social Media Program

Social media "is a group of Internet-based applications that builds on the ideological and technological foundations of Web 2.0, and that allows the creation and exchange of user-generated content" (Kaplan & Haenlein 2010). To leverage the usage of such applications, Patzun defined its social media e-Government Strategy and the program for implementing it, through a consultation process involving the Town Council, representatives of civil society, and the ICT team of the Municipality, supported by experts of the MuNet Program and The International Republican Institute (IRI). The aim of the program is to improve communications between citizens and the government, to open a new ICT-based communication channel, to promote citizen participation in decision-making processes related to municipal development, and to promote local activities and culture beyond the local boundaries. The following sections present the flagship initiatives of the program.

3.1 Patzun Online Government Portal

The aim of the portal (Government of Patzun 2007) is to disseminate general information about the municipality as well as information related to municipal management - finances, development projects. It also serves as a gateway to other social media tools used by the Government. The portal serves as a repository of over 800 files, containing detailed information about municipal studies, maps, financial reports, and minutes of the City Council meetings, among others.

Created in 2007, it represents Patzun's main electronic communication channel. Soon after its deployment, the content was migrated to DotNetNuke Content Management System and later to Joomla! 1.5. Currently, is being migrated to Joomla! 2.5.

The target audience of the portal includes the general public. Main sections are dedicated to professionals, college students and middle-aged citizens.

The portal offers a rich content, including historical data, and information about the community culture and traditions. Dedicated to students, professionals and international organizations, the portal includes a page dedicated to municipal management - Information and Development page; showing comprehensive data about the community. It also includes tourism information highlighting main celebrations of the community. Another section - "Your City" page, publishes information about the City Council including the minutes of the Council meetings.

Technical issues related to the portal are resolved by the web administrator, and contents are managed by the ICT advisor and the web administrator. The Mayor and the City Council member monitor the contents and make timely contributions.

Statistics on the usage of the portal are available since February 6, 2012. The portal received 27,887 visits; 38 visits per day in average. 89% of visitors access through a PC, 10% through mobile devices and 1% through tablets. Statistics indicate that visitors access the portal from their offices or workplace. 87% of visitors are from Guatemala, 8% from USA, and 2% from Canada.

Due to the current migration, minimum content is being updated. There is no current plan aiming at increasing the visitors, since the trend is to move to social media. In the new version, the News section will be replaced by a Facebook page where news and content will be daily updated. The new version of the portal will support two languages, so content will be available in Spanish and Kaqchikel. A snapshot of the portal and some statistics about the usage are shown in Figure 2.
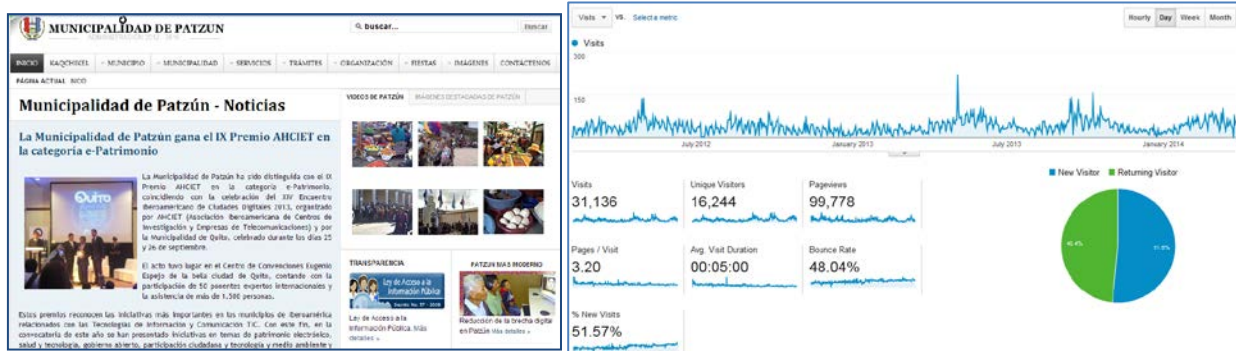
Figure 2: Patzun Government Portal - A Snapshot and Usage Statistics

3.2 Patzun Video Channel

The original aim of the video channel (Government of Patzun 2009) is to showcase Patzun to the world, to publicize municipal affairs and to promote local development and culture.

Patzun opened its video channel on 12th May 2009 through YouTube. YouTube was selected since it was the most well-known channel among Patzun population and the most widely used by the youth.

Offering a wide range of topics, the video channel targets the whole population of Patzun, including youth, adults, elderly, professionals and institutions. Up to date, the channel has a repository of 1,850 files organized by topics of interest in 33 folders and distribution lists. An audience special group comprises the illegal migrants in USA, who frequently watch the videos. Therefore, the strategy for uploading content is being revised to address their demand. Table 1 shows some video statistics.

Table 1: Patzun Video Channel in YouTube – Statistics

NO.	ALBUM	VIDEOS	NO.	ALBUM	VIDEOS
1	Technologies	297	10	Transparency	76
2	Citizen Participation	257	11	Communities –Xeatzan Bajo	65
3	Development	249	12	Communities	57
4	Culture	175	13	Government	56
5	Sports	150	14	Women and Adults	55
6	Education	138	15	Municipality	47
7	Institutional visits	97	16	Lanterns Night	43
8	San Bernardino Fair	85	17	Easter Time	36
9	Kaqchikel	85	18	Religion	33

Through "learn by doing" experience, some criteria for video management have been defined, including: 1) *Themes* - most videos are taken in public activities organized by the Government – like cultural and sport events, social activities of the municipality, inauguration of projects, meetings, institutional visits, etc. 2) *Recording* - videos are taken with simple digital cameras, such as 14 and 16 megapixels Canon, Nikon CoolPix L4, Sony Handycam DCR- SX44; and cell phones; 3) *Duration* – videos usually last between 1 and 3 minutes, with few exceptions; 4) *Editing* – videos are uploaded without editing; 5) *Sources* - videos are provided from several sources; 6) *Workflow* - videos are collected by the web administrator, uploaded by the web administrator or the ICT advisor, promoted on social networks by both of them, and monitored by the Mayor and the City Council member who both ensured that the videos are aligned with the government development strategy.

Videos are provided by government departments as well as citizens, and are uploaded to the channel by the web administrator and the ICT advisor.

Since May 2009 and until January 2014, 1,869 videos have been uploaded, which all together have 288,272 views. Videos are sorted into 33 folders. Since each YouTube folder only accepts 200 videos, some folders were duplicated – like the Technologies, Citizen Participation and Development folders. The channel reached 202 subscribers, 49 unregistered, so the current number is 153. In total, nearly 65% of the visitors are from USA and Canada. The average time of watching videos varies depending on the visitor's location – 1.28 minutes for USA, 1.30 for Canada, and 1.16 for local. The video mostly watched is "Patzún Market one Sunday from the corner of the Park". The video was watched 13,554 times, 80% of the views are from USA and Canada. Based on statistics showing that migrants are more interested in watching videos completely than local people, we believe Patzun videos are being used to accompany migrants staying away from their homes and community.

The number of visitors has been growing with the number of uploaded videos. The highest number of visits was registered on 23 September 2013 with 2,469 visits. On 16 days, the number of visits reached over 1,500. Such dates followed major cultural or sport events taking place in Patzun.

The next step for future development of the channel is to enable migrants to generate and upload their own videos to the channel. As an ongoing activity to promote the channel, videos and photographs contests are regularly organized. A snapshot of the Patzun video channel in YouTube and some statistics are presented in Figure 3.

3.3 Patzun Photo Album

The aim of the album (Government of Patzun 2011) is to show municipality affairs as well as the cultural, social, sport- and development- related activities that are carried out in Patzun, to citizens and to the world. The album also serves as a repository of images for further analysis of changes taking place in the town and to show how the Government manages the local affairs. The collection also publicizes the work of non-government actors.
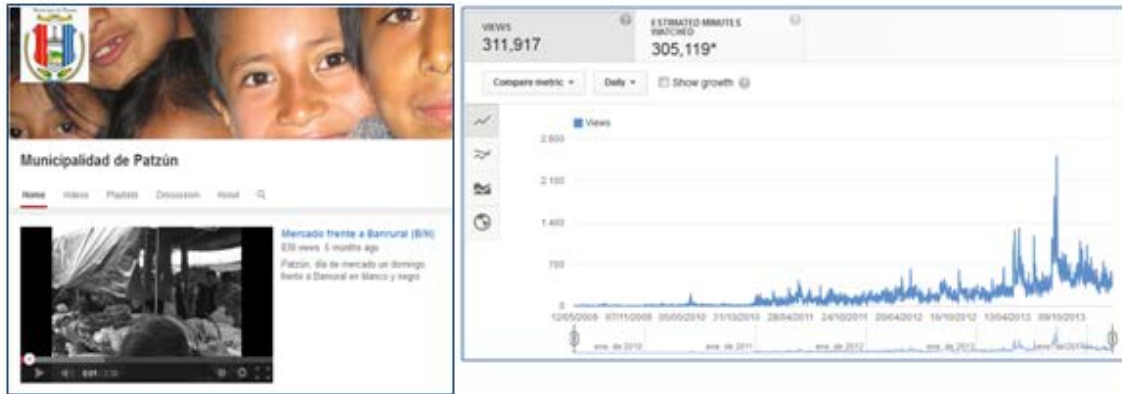
Figure 3: Patzun Video Channel in YouTube - A Snapshot and Usage Statistics

Created in April 20122, the album was deployed in Picassa and later moved to GooglePlus, since the latter offers more capacity. The target audience comprises groups of all ages – youth and adults, as well as professionals and institutions who are made aware of and can follow the development of the community, through published images.

The collection is organized in 56 folders containing images that best reflect the reality of Patzun. Some distinguished photos include those taken by a Peace Corps volunteer in 1963, and those about Patzun culture and cemetery.

The tool is managed by the web administrator and the ICT advisor, although content is provided by various government departments as well as non-state actors.

Since its inception, 8,200 photographs have been uploaded, the site received 7,131 visits and in total, 440,538 pages or photos have been viewed. In average, 61 photos are viewed by visit. The average view time is 8:43 minutes. 82% of the visitors are from Guatemala and other countries like USA, Spain, Mexico, Colombia, and Canada. 99% of visitors access through a PC. To target people on the move and to improve accessibility, access through other devices need to be promoted.

To stimulate the use of the albums some actions are being conducted, such as an annual competition of photographs and videos. A snapshot of the photo album is provided in Figure 4.

3.4 Patzun Facebook Page

The aim of Patzun Facebook Fan Page (Government of Patzun 2012) is to provide immediate information about community activities and to encourage citizen participation. Given the interest raised by the page, it is also being used to raise awareness of development agencies and international organizations about daily activities taking place in Patzun.
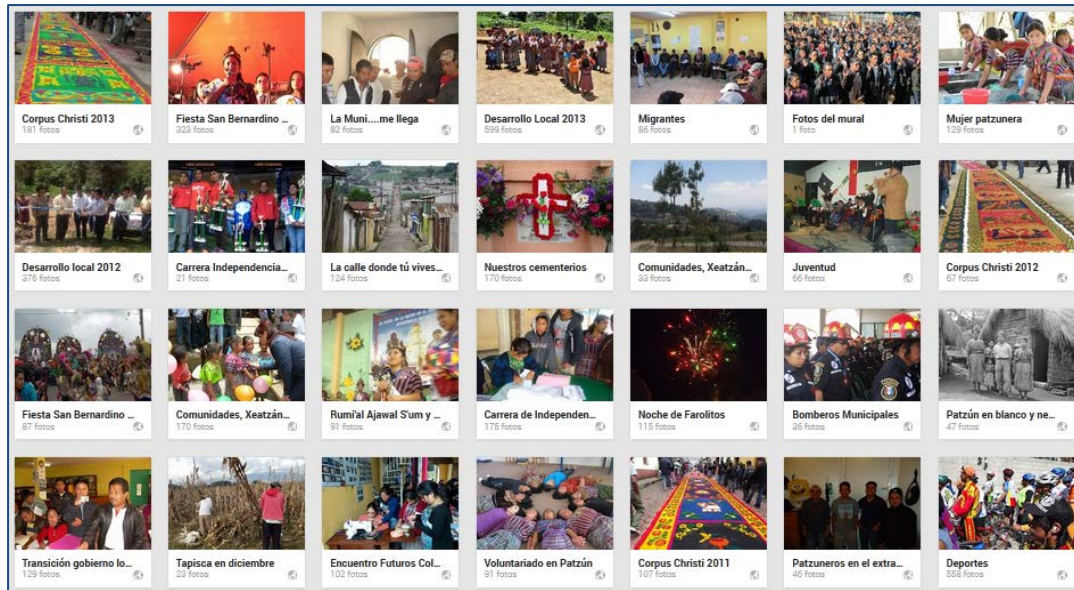
Figure 4: Patzun Photo Album - A Snapshot

The page was created in June 2012. It addresses the general public, although the latest statistics show that the followers are 40% women, 60% men, and 70% of them are within 18 and 34 years.

Due to the varied profile of followers, a rich content is offered; such as news, municipal advertisements, scholarships and jobs opportunities. The Page also displays information from other social media tools, as well as Government projects, Mayor's activities, and institutional visits. It also has posts about social, cultural, and sports activities. Threads that capture greater attention are those related to culture, local language and sports.

The Facebook page has five administrators – the Mayor, the City Council member, the ICT advisor, the web administrator and the public relations manager. For safety reasons as well as to respect the institutional style, a controlled vocabulary is being used and there is a control of followers that offend or use unsuitable words.

In early January 2014, the page had 1,826 followers. The number of followers increased close to the dates of the Patron Festivity (May), Corpus Christi (June) and major sport activities (September). In July 2013, after one year of being launched, the following statistics were available. 399 posts were uploaded from January to June 2013. 71 posts (17%) were news, 64 (16%) were related to cultural activities and religious celebrations; 41 (10.3%) were related to development issues, and 31 posts (7.8%) referred to other social media. Posts related to jobs and fellowships were few – only 23 (8.5%), although such posts were followed by many users since the topic concerns most of them. Following the scope of some posts, the election of the Aborigine Queen had 3,508 followers; the carpets for the Corpus Christi procession had 1,792 followers (435 organic and 1,385 viral); and the interview to a candidate for the Aborigine Queen was followed by 1,034 people (843 organic and 224 viral). Table 2 shows statistics about the posts. Posts related to cultural and religious activities have in average 40 likes, while those related to development 25.

To achieve further growth, the Facebook page is promoted in all the events organized by the Municipality, news and announcements are frequently posted, contests managed through the page are organized regularly, and photos and videos presenting Patzun citizens are regularly published.

3.5 Patzun Boards

The aim of the boards **Error! Reference source not found.** is to show the most beautiful images of Patzun. The boards are published in Pinterest complementing the photos available in Google Plus. Considering Pinterest audience, the most beautiful images are the ones included in Pinterest.
Patzun created the boards in April 2013. Most of the photos show activities taking place in Patzun.

NO	THEME	CONTENT	TOTAL	%
1	Development	Projects, Infrastructure, Inaugurations	41	10.3%
2	Social Networks	Promotion of other social media tools	31	7.8%
3	Sports	Sport-related activities	28	7.0%
4	Education	Education-related activities	27	6.8%
5	Citizen Participation	COMUDE, CCODE Meetings, Community Authorities	24	6.0%
6	Jobs and Fellowships	Announcements about fellowships and job opportunities	23	5.8%
7	Municipality	Information about municipal affairs, public services, etc.	20	5.0%
8	Women	Women-related activities	16	4.0%
9	Environment	Environment-related activities	14	3.5%
10	ICT	ICT-related activities	15	3.8%
11	International visitors	Municipality visitors	10	2.5%
12	Water and Sewage	Water-, sewage- related problems and announcements	9	2.3%
13	Health	Health-related activities	4	1.0%
14	Cemetery	Cemetery	2	0.5%
		TOTAL	**399**	**100%**

Table 2: Patzun Facebook Page – Statistics of Posts (January-June 2013)

The Pinterest account is managed by the web administrator and the ICT advisor, who are the only ones authorized to upload photos. The public can like, share and add comments to photos. Currently, there are 652 images or pins, in 13 boards. The themes of the photos include: Corpus Christi carpets (128 images); Cemetery (71); Ann Frish's color photos (62); Patzun scenes (55); Culture (46); Kites for the deceased (36); Photos in black and white (31); People from Patzun (33); Astrid Rios's photos (25); and Diego Lezama's photos (24). The Pinterest account is followed by 15 people.

A growth strategy for this initiative has not been defined. A snapshot of Pinterest boards is presented in Figure 5.
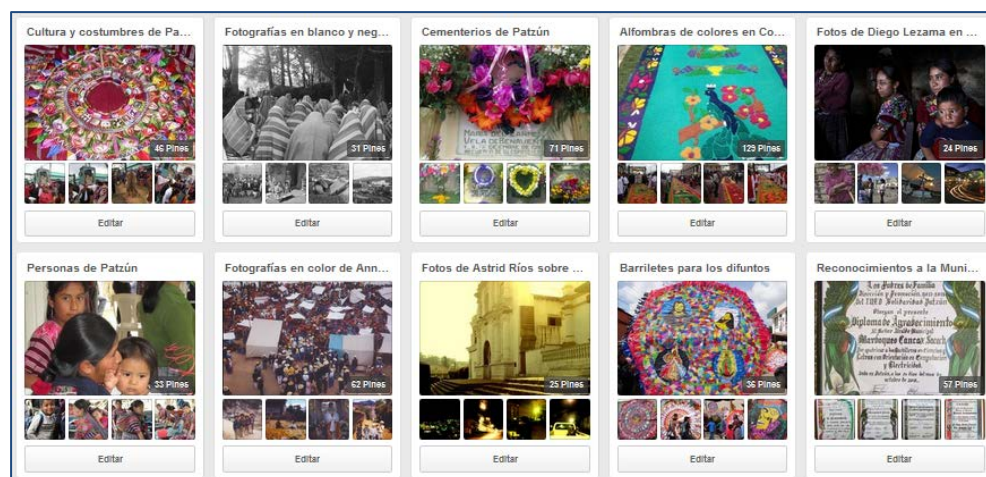
Figure 5: Patzun Pinterest - A Snapshot

4. Related Case Studies – Comparative Analysis

Case studies closer to Patzún experience comprise the 16 municipalities in Guatemala that completed the second phase of OAS MuNet Program in 2011. To compare experiences, the municipal websites were manually assessed to identify the presence or social media tools implemented as part of their e-government strategies. The results are shown in Table 3.

The assessment shows that only 19% of the municipalities have an active institutional portal. Only 13% actively post videos on their YouTube channel, 25% do have a video channel but do not upload videos, 19% do not have a video channel, while 44% do have a channel but the content is outdated for one or two years. On the use of photo albums through Picasa or GooglePlus, only 19% of the municipalities have albums, but all of them outdated. With regard to Facebook, 50% of the municipalities do have an active account; although one municipality has a profile account but not a fan page. 13% do not have a Facebook account and the remaining 38% are outdated. Finally, none of the municipalities developed boards in Pinterest. It conclusion, the municipalities decided to target their social media programs, mainly by creating presence in Facebook, and in smaller degree in YouTube.

Patzun case was also compared with related international experiences. In (Bonsón et al. 2012), authors studied the use of social media and Web 2.0 in 75 local governments in 15 EU countries. They concluded that EU local governments' main aim for using social media is to enhance transparency and that the goal of promoting e-Participation is still in the early stages. Although about 50% of the governments do not use social media, results show that Twitter is the most popular media - 32% of the governments have a Twitter account; 29% possess a YouTube channel and 17% has a Facebook page. As EU local governments, Patzun promotes its YouTube video channel and Facebook page to enhance transparency. However, it does not possess a Twitter account due to the low penetration of such tool among its population. Another study analyzes the use of social media among 250 civil servants in Central Mexico (Picazo-Vela et al. 2012). It concludes that some of the benefits of government use of social media include better user convenience for the dissemination and transmission of information and content. The Patzun experience also shows such benefit; in particular, the convenience of migrant community – by disseminating culture-related information; and of international organizations – by sharing information promoting culture and socio-economic development. The benefit also highlights a difference in the aim of using social media by a rural government – like Patzun, and EU local governments. While Patzun aim is to promote culture and socio-economic development, EU governments' aim is related to strengthen governance systems.

Table 3: Social Media Government Programs in Guatemala – Comparative Study

MUNICIPALITY	REFERENCE	VIDEO CHANNEL	PHOTO ALBUM	FAN PAGE	BOARDS
Canillá	http://www.municanilla.gob.gt	Outdated	Outdated	Active	No
San Miguel Uspantán	http://www.muniuspantan.gob.gt	Outdated	Outdated	Active	No
Santa Apolonia	http://www.munis antaapolonia.gob.gt	No	Outdated	Outdated	No
Cuilapa	http://www.cuilapa.gob.gt	No videos	No	Outdated	No
Palencia	http://www.munipalencia.gob.gt	Active	No	Active	No
Rabinal	http://www.munirabinal.gob.gt	No videos	No	Outdated	No
San Cristobal Acasaguastlán	http://www.sancristobalacasaguastlan.gob.gt	No videos	No	Active	No
San Diego	http://www.sandiego.gob.gt	No videos	No	No	No
Acatenango	http://www.muniacate nango.gob.gt	No	No	No	No
Samayac	http://www.samayac.gob.gt/portal	Outdated	No	Active	No
San Juan Comalapa	http://www.municomalapa.gob.gt	Active	No	Active	No
Quetzaltenango	http://www.muni quetzaltenango.com	Outdated	No	Active	No
San Antonio Sacatepequez	http://sanantonio.mancuerna.org	No	No	Active	No
Ixchiguan	http://www.ixchiguan.gob.gt	Outdated	No	Outdated	No
San Juan Ixcoy	http://www.sanjuanixcoy. gob.gt	Outdated	No	Outdated	No
Unión Cantinil	http://www.union cantinil.gob.gt	Outdated	No	Outdated	No

5. Patzun Experience – Findings

The following sections discuss challenges, key success factors and lessons learnt of the case study.

5.1 Challenges

The main challenge faced by the program was facing the changes in government due to electoral cycles. Specifically, in 2011 the new elected Mayor had serious doubts about the viability and importance of the

program. However, after carefully revising the program, he decided to follow up and strengthen it. To avoid the challenge, the City Council passed a proposal for institutionalization the Program (see Section 5.2).

Another important challenge is to achieve greater commitment of the municipal staff, so they can be involved in program activities and contribute with content development. Although 90% of them use social media to communicate with others, many of them do not possess the required technical skills, such as managing and using communication tools and email, and file management, among others.

Finally, another challenge is to get the central government or institutions working with municipalities interested in this type of program and for them to provide support – like training, as well as some kind of financial, human or technical resources. The experience conducted by Patzun Municipality has been supported by development agencies - OAS and IRI (International Republican Institute).

5.2 Key Success Factors

Key success factors of the program include:

- *Political Will* - The success of program relied on the strong support provided by the Mayor and the City Council. Both, former (2004-2011) and current mayors (2012-2015) firmly believed on and supported the program with human and financial resources. The current Mayor created the "Commission for the Information Society and Information and Communication Technologies (ICT)" within the City Council. Such decision enables that any Information Society- and ICT-related initiative receives the political support of the Council member representing the Commission. In addition, to institutionalize Patzun e-Government Strategy and the Social Media Program, the City Council Act 75-2013, from 7th October 2013 specifies that the use of social media tools is part of citizens' rights, regardless the government authorities in place.

- *Teamwork* - One important decision was to create a team able to drive the Program and to coordinate the efforts of major stakeholders. The team comprises: 1) *City Mayor* - gives political support to the Program and acts as the main Program ambassador; 2) *Council Member* - is the representative of the Council Commission for the Information Society and ICT. He is responsible to support and internally endorse all the Program actions, from planning, through purchases, to implementation plans. 3) *ICT Advisor* – is responsible for strategy implementation, tools selection and content development; 4) *Web Administrator* - is responsible for managing technical aspects of social media and for uploading content; and 5) *Public Relations Manager* – is responsible for generating content. Other stakeholders working closer with the team include Municipal Secretariat, Director of Finances, and Municipal Affairs Department.

- *Content Management* – Content uploaded and shared through social media are in line with the Government communication strategy. The content shows many daily activities related to municipal development – like inaugurations, news about development projects, Mayor's speeches, as well as information related to government accountability. It also shows events and activities related to the community culture and traditions. Currently, all content is in Spanish, while 15% is in Kaqchikel. Content presentation is simple and unedited – particularly videos and photos; so it shows the town "as is". Government departments and officials provide information in different formats and team administrators upload it to the social media.

- *Licensing* - The Municipal Government believes in open data, the importance of sharing information, and how this contributes to the development of the Information Society. Therefore, all tools applied by the Program are under the Creative Commons license (Creative Commons 2001). Such decision enables persons and entities interested in publicizing the community to use and share the images published in Google Plus and Pinterest collections.

- *Low Cost Tools* - The applied tools have been of low cost, so no large investments for their development, deployment and operations were (are) needed.

5.3 Lessons Learnt

One main lesson learnt is the importance of having a government strategy that includes a social media program aiming at improving communication with citizens. The program needs to define guidelines for administering and promoting the usage of the tools, and for content development. Another important lesson is to have a dissemination plan for the promotion of such tools, so that each tool helps to promote the others,

and all together achieve growth by increasing the number of followers. The plan should consider the promotion of social media tools through traditional channels, for reaching citizens who are not engaged. Finally, it is important that the local government assembles a multi-disciplinary team, able to generate relevant and high-quality content, and to ensure a consistent management approach for all tools.

6. Conclusions

The paper presented the experience of the Government of Patzun - a rural government in Guatemala; implementing a social media program, part of its e-Government strategy. Five social media initiatives were introduced. The initiatives proved to contribute to disseminate Patzun culture – in particular to alleviate the emotional deprivation suffered by the community members who migrated; and to promote socio-economic development – providing information and raising awareness of international organizations and aid agencies collaborating with the Government.

From the experience, the challenges, key success factors and lessons learnt were synthesized. Major challenges include changes in government due to electoral cycles, obtaining government staff's commitment for contributing to the initiatives and raising interest and obtaining support from the national government. Key success factors include the political will of the municipal authorities, effective teamwork, having guidelines for content development and upload, the policy of open licensing for publishing data, and the low cost of the applied tools. Main lessons learnt relate to defining a social media program as part of an e-Government strategy, a plan for promoting the usage of social media tools, and the relevance of assembling a multidisciplinary team.

Our future work includes packaging methodologies and guidelines applied for each of the initiatives, in order to create a toolkit for local governments willing to adopt similar social media programs.

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Zero Moment of Truth: a new Marketing Challenge in Mobile Consumer Communities

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Abstract: Although it is known that consumers look for information prior to purchasing certain goods, it is not so clear how, where and why they are looking for it. Knowing the answers to these questions, it may be possible to reach consumers more effectively with a better targeted offer. Nowadays, the Internet is the most popular source of information and opinions; and this information can be accessed faster and in more conveniently than ever before. The Web is a place where Internet users can decide to make a purchase online or offline. Today's shoppers bounce back and forth at their own discretion in a multi-channel marketplace. They switch devices to suit their needs at any given moment. They search for products, take their time to look at reviews, ratings, styles and prices, and then they search again. Google refers to this marketing concept as "Zero Moment of Truth" (ZMOT), which is simply a shared "truth" (somebody's subjective experience) that influences a purchase decision. It's all about speeding up the process of making an initial decision, which formerly was taking place at the store, and has now become a task we may conveniently perform at home when checking a recommendation on the internet. Social media is a great environment for the use of the ZMOT marketing concept. Customers, through social media channels, can share opinions and learn from each other's experiences in the form of shared comments, content, ratings, reviews, or recommendations. They are relying on the influence of friends (including those on social networks) along with consumer reviews and expert opinions. With the rapid development of mobile technologies, more and more consumers can interact with other consumers, brands, and retailers through mobile channels. Mobile technologies are increasingly becoming part of everyday life of the consumer. From year to year, the computing power of mobile devices increases, as does the data bandwidth. At the same time, prices become more affordable to the consumer, allowing access to information anytime and anywhere, regardless of time and place. Taking into consideration these issues, this paper presents the impact of mobile consumer communities on the formulation of the purchase funnel, as well as the practical uses of the ZMOT concept, based on selected case studies. A set of recommendations for conducting proper marketing activities using ZMOT will be presented.

Keywords: Zero Moment of Truth; purchase funnel, social media, mobile customer communities, mobile communities, mobile marketing paradigm

1. Introduction

The dynamic development of new technologies and the progress of globalization have significantly affected consumer profiles and consumer behavior patterns. Modern consumers gradually depart from the typical pattern of passive receptors of purchased goods and services, and evolve into active prosumers. They not only make conscious and deliberate choices of goods and services as well as time, place and manner of purchase, but also play an active role in product design and marketing campaigns. Consumer decisions are gradually more and more influenced by the opinions of other consumers, gathered in the course of their contact with the product or service, with virtual world rapidly becoming the dominant platform of opinion exchange. As early as in the 1980s, A. Toffler predicted that the demarcation between producers and consumers would gradually blur in the foreseeable future (Toffler 1997, p.312). At present, consumers already perform a wide range of daily routines and activities typically associated with professional tasks of producers, salesmen and other ancillary personnel. According to D. Tapscott and A. Williams, the general profile of prosumer-characteristic or prosumer-defining activities includes (Tapscott, Williams 2008, s. 215-218):

- adjusting to consumer needs, as reflected in the adjustment of products to specific uses, or in increased involvement of the consumer in the product design,

- relenting control, as manifested in the approach of treating products as platforms for individual innovation, regardless of the formal permission or lack thereof,

- providing customers with a wide assortment of individuation instruments; arranging the context for perceiving the product as a basis for experiments,

- treating the user as a partner rather than a customer,

- sharing the fruit of consumer-made innovations, and opening up the prospect of passing prosumer rights to innovative designs, not only as a source of profit for the author, but also as a potent stimulus for the development and increased involvement of prosumer patterns.

At the same time, it should be noted that prosumer behaviors go well beyond the simple adjustment and customization of products. Prosumers form active consumer communities (user groups) and use them actively as platforms for sharing information, orchestrating their team efforts in product design, exchanging tips and tricks, developing dedicated personalization instruments and blueprints (Tapscott, Williams 2008, p.186).

The prosumer phenomenon not only reinforces the C2C (*Customer-to-Customer*) relations, but is also manifested in a wide range of business behaviors typically associated with the *B2C (Business-to-Customer*) relations. It has already affected such classical theories as the purchase funnel concept or the model of purchase behaviors, giving way to new models based on co-determination and opinion exchange, such as *The Consumer Decision Journey*, as promoted by McKinsey&Co. Modern consumption is also strongly affected by modern integration between the real and the virtual, with the two worlds gradually becoming a single, intertwined continuum. With new technologies, modern consumers are part of the virtual world, with practically no restrictions of space and time in accessing the virtual depositories. In this context, it may be observed that the development of modern prosumerism and its significance have been greatly affected by the access to mobile technologies and the advance of the virtual social media and Internet communities.

Social media have also opened up new channels of communication, with a wide array of features which can be tailored to the situational context. Users can introduce long, diary-like entries on their blog sites, inviting others to share their input and opinions (in comments), or post a short, spontaneous post on any topic in their micro-blog entries. Furthermore, social media open up the potential of making new acquaintances, in the course of browsing the consecutive nodes of the social network structure. Communication between users can be realized through profile entries, comments or dedicated internal communication instruments, such as text, voice messaging and video clips. This helps constitute informal user groups to focus the communication efforts based on specific content or interests, thus creating virtual consumer communities.

Mobile technologies constitute a big step in the advance of communication processes. The ubiquitous mobile devices with multimedia capabilities have led to the formulation of a new quality of life. The previous postulate of being online 'at all times' has been supplemented by the potential of being online 'everywhere we go'. The continued improvement of data transmission methods and the modernization of terminals, together with their mobile capabilities, have already resulted in rapid development of new paradigms in science and the formulation of new business models (Łysik, Kutera 2011).

The integration of social media and mobile technologies is particularly important in those areas of business activities which base their success on fast and effective communication with consumers. This integration has formed a strong stimulus for redefining the existing marketing models, as evident in the recent emergence of the *Zero Moment of Truth* (ZMOT) concept, presented herein. In particular, the authors were intent to present the impact of mobile consumer communities on the formulation of the purchase funnel, as well as the practical uses of the ZMOT concept, based on selected case studies.

2. Mobile Communities and Their Role in The Marketing Process

In the light of the theories by F. Tonnies and G. Hillery, the term 'community' should be defined as an integration of a group of persons within a certain geographic area (such as the neighborhood or a city district) around certain shared goals or interests. Modern reevaluations of the term depart from the traditional requirement of shared geographic space, focusing instead on the nature of the processes taking place between community members. Through modern technology, the integration between community members may also take place virtually, thus eliminating the need for physical contact in the act of communication (Ridings 2006). H. Rheingold defines virtual communities in terms of social aggregation emerging from the virtual space, with enough people conducting public discussions for long enough and with enough emotional content to form meaningful, personal relationships between individual members in cyberspace (Rheingold 2000). In this context, communities are no longer bound to a specific territory or time, and their members are often anonymous, but – nevertheless - they play an important role in the social, cultural or intellectual reality.

Virtual communities can be approached on three major analytical levels (Fremuth, Tasch, Fränkle 2003):

- technological – representing their technical and infrastructural outlook, a visible 'product' being offered to the members of the community with the purpose of satisfying their communication needs,

- communicational – reflecting the communication domain with its variety of communication forms: synchronous, asynchronous, one-to-one, one-to-many, many-to-many,

- relational – reflecting the long-term personal relationship and regular, stable communication between community members.

It is the third of the above dimensions that defines the 'true' community, in line with the already cited definition by Rheingold, and it is the relational aspect of virtual communities that forms the theoretical basis for further deliberations. The technological and communicative levels are, in this context, largely marginal, although indispensible for proper operation of the virtual community.

Rapid development of new technologies has resulted in a steady evolution towards social virtual networks and online communities with a markedly lower level of emotional involvement, due to the overwhelming number and variety of practical applications (Internet users now typically participate in multiple communities, therefore the level of involvement per application is lower than that reported by Rheingold at the onset of the 21st century). Virtual communities operate through social interactions and online exchanges of views and opinions. Social interactions, in this context, may take on the form of bulletin boards, with discussion based on e-mail technology (a question-answer model of application), interactive discussions based on chat or forum functionality, or automated distribution of information via dedicated web applications (Łysik, Kutera 2011).

The development of mobile communication technologies resulted in further evolution of virtual communities into their mobile counterparts, characterized by the following set of distinct qualities:

1. the access to mobile communities is effected via mobile devices, opening up the possibility of spontaneous and continuous communication,
2. mobile community platforms offer extended communication services based on 3rd and 4th generation of mobile networks, such as:
   - unrestricted access, regardless of the time and space constraints,
   - instantaneous responsiveness through mobile data transmission,
   - automatic identification and validation of devices,
   - user tracking through geolocation technologies, such as GPS,
3. new behavioral patterns in mobile communities, as compared to the 'traditional' virtual communities.

With reference to the already defined model of analytical levels, the third level (relational) is manifested in the fact that mobile communities typically form on the basis of the pre-existing groups, already bound by social relations, and willing to extend their communication options. The communication services offered by mobile communities constitute new communication contexts (the second level), while mobile technologies represent a perfect development of the earlier virtual community platforms (the first level).

Path and Foursquare are good examples of mobile communities. Path is an application designed to enhance communication between family members and close friends – hence the number of contacts is restricted to 50 persons. The system allows for status updates, photo sharing and messaging, user location tracking, as well as collecting and sharing 'moments' (such as the music the user is listening to, the time the user goes to sleep). Foursquare is a location-based community, with users checking in at specific venues, sharing opinions, experiences and photos of their present location. A system of 'badges' and user points stimulates the competition between friends and acquaintances participating in the community. At this point, it may be useful to quote a number of data collected with respect to mobile communication worldwide (Mashable 2013):

- 67% of UK citizens have Internet access in their mobile phones (compared to 63% in Russia, 57% in Brazil, and 49% in the U.S.),

- 55% of Brazilians update their status on virtual communities via mobile devices (UK - 46%, Russia – 41%, the U.S. – 34%),

- 71% of Brazilians use mobile Facebook at least once per day, compared to marginally lower percentage reported in the UK and the U.S., and contrasted with only ca. 20% in Russia (incidentally, 28% of Russians do not use Facebook at all).

The mobile channel allows the marketing professionals to reach and influence their customers throughout the full course of the purchase funnel (need awareness – involvement – evaluation of alternatives – conversion – loyalty). In the age of multiscreen marketing, it may be useful to emphasize the dominant role of mobile devices – smartphones have the highest estimated rate of daily consumer interactions and the highest reported rate of serving as a starting point for further multiscreen activities. In the diversified technological environment, marketing professionals are increasingly dependent on precise information on the times, locations, and manner of use of specific devices in specific customer segments. Mobile technologies can provide this type of data. For 2014, the analytical experts at Millward Brown forecast the following marketing trends in the context of multiscreen marketing (Millward Brown 2013):

- the video portion of the average home budget will continue to shift from TV (cable) towards multiscreen functionality,

- the mobile media expenditures will grow significantly, particularly in the segment of products addressed to the young generation,

- brands will increase their production of mobile content, improve the process of content sharing;

- producers will increase their efforts at providing the opening-night marketing content, through innovative use of digital outdoor media and wearables (smart watches, 'Google Glass').

All the above trends show a distinct emphasis on mobile technologies, due to their growing importance and ubiquity. Smartphones, tablets and wearables, when properly synchronized, will provide more and more useful and personalized information on their user. This information may then be applied successfully for marketing purposes, improving the effectiveness of the process.

3. The Nature and Marketing Significance of ZMOT

Before the outbreak of mobile technologies and social media, the traditional pattern of decision-making among customers involved three distinct phases (Solis 2013):

1. a stimulus, in the form of advertisements broadcast on the TV, radio, press, other printed material, and/or the Web.
2. the First Moment of Truth (FMOT), i.e. the pre-purchase phase of the decision-making process, with such sale-determining factors as packaging quality, the composition of elements, or the choice of product presentation strategy at the point of sale.
3. the Second Moment of Truth (SMOT), i.e. the post-purchase experience deciding on user satisfaction (or dissatisfaction) from the purchased product or service.

In modern times, consumers are more interested in learning how the product can improve their life quality. They make careful comparisons and build their knowledge of the products; and this trend makes them more prone to affiliate with other consumers and form social communities that help in making informed decisions. Previously, the critical moment of the decision-making process occurred in the FMOT phase, immediately prior to the conclusion of the purchase, i.e. in a retail outlet or on the online store (Amerland 2013). Today, however, consumers have decidedly more knowledge on products. Well in advance of the FMOT, they collect information that in their opinion is essential in the context of the planned purchase. For this purpose, they utilize a wide array of information sources: family, friends, experts and communities. Knowledge is collected both traditionally, and via electronic media. This process helps them make informed purchase decisions, and the knowledge gathered in the course of this research can then be passed on to others.

ZMOT marks the moment when the consumer is already aware of his or her needs and preferences, and is ready to proceed with the task of reconnoitering detailed information on the product or service considered for purchase. This theoretical model seems in line with the research findings. For example, research findings collected in a Google study (Lecinski 2011) show that:

- 70% of Americans study user opinions and product reviews before making their purchase decisions,

- 79% consumers use smartphone devices when making their purchase decisions,

- 83% of housewives look up online information, reviews and opinions on products advertised on TV.

By supplementing this traditional pattern of consumer decision-making process with the subsequent phase of ZMOT (see Fig. 1), companies may improve their awareness of the manner and content of their presentation efforts, in order to better influence the purchase decisions made by potential customers (Google 2013).
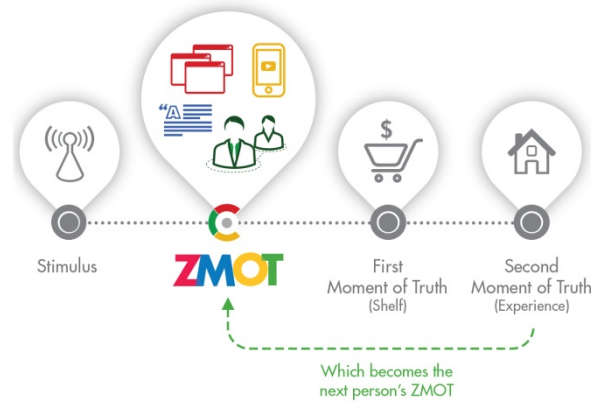
Figure 1. The consumer decision-making process, supplemented by the ZMOT concept

In this age of multiscreen marketing, it is important to emphasize the role of mobile devices – the smartphones have the highest estimated rate of daily interactions and serve as the most frequent starting point for further multiscreen activities. It should also be noted that, in the majority of cases involving the use of smartphones (57%), the user has simultaneous access to other devices, such as the PC, laptop or a TV set (Mobile Marketing Association 2013). This is an important conclusion, since the research shows that modern users are more and more prone to using more than a single device at any given time, such as (Google 2012):

- a smartphone and a TV set - 81%,
- a smartphone and a laptop/PC - 66%,
- a laptop and a TV set - 66%.

This shift enables the consumers to enter the ZMOT phase soon after the first exposure to a stimulus, or even during such exposure. For example, seeing a car advertisement on TV, the consumer may reach for a smartphone and immediately read user opinions, or verify the actual fuel consumption of the specific model.

The significant increase of user opinions and product reviews published on the Web in recent times has a great impact on the process of acquiring information on products and services. Living in the information age, we have reached a completely new dimension of the word-of-mouth marketing (WOM) (Cakim 2009). Practical manifestations of this virtual phenomenon include:

- direct communication between consumers, via e-mail, social networks, chat applications and instant messaging services,
- opinions and reviews posted on such portals as Epinions, TripAdvisor or Yelp,
- comments and appraisals displayed alongside Google Maps lookups,
- virtual communities with users exchanging information on products and services.

Knowing their budgetary constraints, customers want to make sure that the product they end up with (a tablet, a car, etc.) will be the best deal in a given price range, and that their purchase decision is going to be optimal. The ZMOT phase helps marketing experts influence customer decisions and persuade them to make a specific choice in their purchase.

4. Behaviors of Mobile Customers, in the Context of the ZMOT

The development of mobile virtual communities has become an important social phenomenon, and, as such, has brought a number of distinct changes in purchase behaviors. Modern consumers have now access to a completely new medium of communication, with wide potential for interaction and a large repository of readily available information. Fig. 2 presents a typical day in the life of a Polish mobile consumer, based on measurements conducted using the TNS Mobile Behave method. As seen from the sample, the mobile community services are an inherent part of a modern mobile consumer's average day. Due to their personal and invasive character, those services have a clear impact on decisions made by the mobile consumer. On the other hand, companies are well aware of the potential, commercial uses of mobile community services for marketing purposes. The high degree of personalization, the marketing value of personal information published on social networks, and the ubiquity of mobile technologies – all of these factors provide an ideal

setting for effective marketing campaigns. In addition, modern mobile consumers are decidedly more susceptible to viral and word-of-mouth marketing, as well as more spontaneous in their purchase decisions.
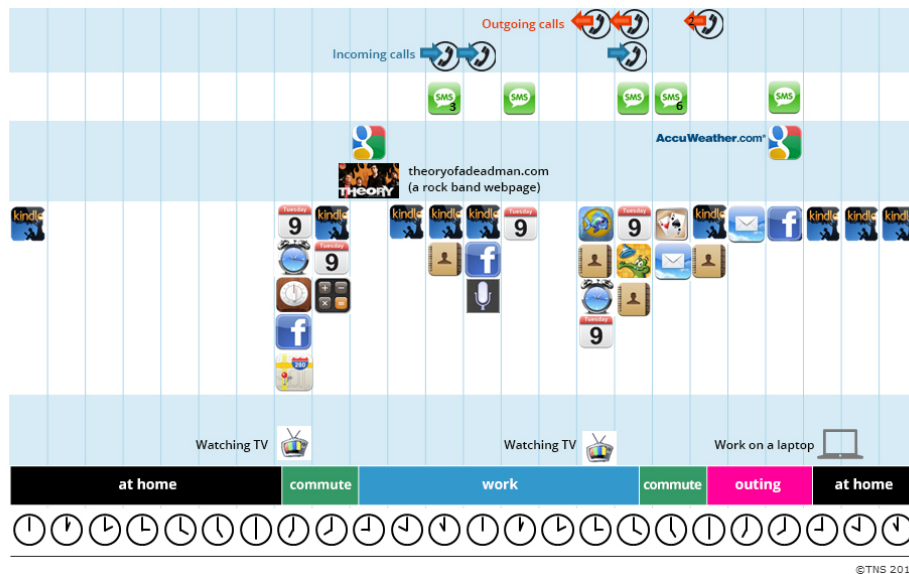
Figure 2. A day in the life of a Polish mobile consumer, based on data obtained using the TNS Mobile Behave method.

In order to improve the understanding of mobile consumer behaviors in the context of the ZMOT, Google company conducted a study of 5 thousand consumers in 12 selected categories, from groceries to automotive products and financial services. The study was designed to pinpoint the time and place of changes in customer behaviors with relation to their purchase decisions. The results show that, in the year 2011, an average consumer employed 10.4 sources of information in the process of making a purchase decision (an increase from 5.3 sources in 2010). The study analyzed the following sources of information:

- TV spots and programs,
- traditional press publications,
- recommendations from family members and friends,
- web pages,
- product appraisals,
- online opinion-forming media.

The Google study (Google 2011) shows that consumers are the most likely to seek product information on Web search engines (50% of studied population) and from interactions with friends and relatives (49%). They also employ price comparison websites (38%), online reviews (31%), product- and service-related comments (22%), and direct interaction with producer/provider via social network media, by 'liking' the brand (18%). They also reach for official sources of information – the producer/provider websites (36%) and retailers (22%). Again, it is worth noting that all of the above ZMOT activities may be performed using mobile devices.

It may also be useful to note at this point the varied intensification and timeframes of ZMOT activities prior to the act of purchase, depending on product/service category (see Fig. 3). In the case of fast-moving consumer goods (FMCG), including grocery purchases, the intensification of product queries takes place immediately before the purchase or within a couple of hours before the actual transaction. For goods and services which may not be readily available for purchase or which require more decision time, the process may intensify 4-6 days before the actual purchase. In the case of goods of considerable material value, particularly those which involve steep outlays or additional sources of financing, such as audio/video equipment, electronic devices or automotive products, the peak of the query process occurs 6 to 4 months before the actual purchase, and involves both the search for best possible product within a given price range, and the search for stores and points of sale which offer best deals on particular items considered for purchase.
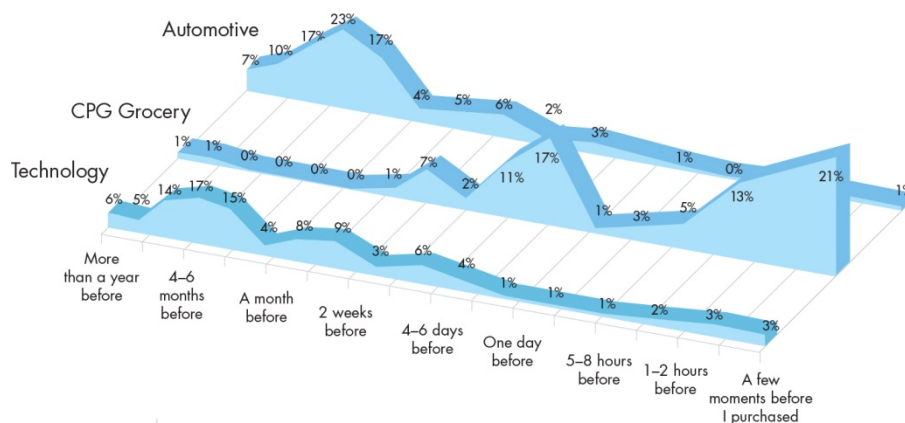
Figure 3. Averaged purchase cycles for three distinct purchase categories.

Modern consumers are also more flexible in terms of dividing their attention between multiple screens (devices). This means that marketing professionals may send the stimuli via one channel (device), and present ZMOT information on a different medium. The 2011 study by Google identified the following consumer paths in this respect (see Fig. 4).

Figure 4. Consumer paths, by device employed in the process of goods purchase.

5. The Impact of Mobile Consumer Communities on The Purchase Process, in the Context of the ZMOT

The ZMOT concept changed the marketing perception of consumer purchase behaviors. ZMOT is distinctly affected by mobile communities. Community affiliation, together with mobile access to its services, allows consumers to engage in purchasing processes on a continuous basis. Moreover, the mobility aspect greatly affects the volume of information and the number of interactions available to users, with direct implications on brand and product awareness. This, in turn, results in more informed purchasing decisions. Through social media and mobile communities, consumers have access to a wide assortment of instruments for recognizing and reconnoitering their interest areas, as well as for extensive product comparison. The Google study shows that as much as 77% of smartphone users utilize their mobile devices at the store. In addition, 81% of their weekly smartphone activities involve Web browsing, a natural extension of operations hitherto realized on desktop computers. Moreover, the two most important areas of application for smartphone devices are: browsing social media content and Web information lookup (Google/IPSOS OTX MediaCT 2011). These reports seem to substantiate the vast impact of both mobile technologies and social media upon modern consumer behavior patterns, particularly those associated with the ZMOT phase.

Companies have already begun to explore the ways of affecting consumer behaviors in the ZMOT phase and methods of influencing their purchase decisions. Figure 5 presents selected commercial implementations of these concepts on global markets. The nature of ZMOT in the first case study involves provision and wide dissemination of extensive knowledge on Android platform. In effect, consumers interested in purchasing a new mobile device, when faced with the choice of a mobile operating system, are confronted with the 'army of evangelists' who stimulate their interest and offer immediate support to facilitate their 'conversion' into Android users. With the help of careful strategies orchestrated by company marketing department, consumers who consider their purchase of an Android device are immediately targeted by representatives of the wide user community, and offered extensive information on the product. Obviously, the mobile channels are the most suitable environment for this type of influence. The second case study represents the strategy of

stimulating the friendly rivalry among community members to encourage them to set up and pursue their own personal goals, in comparison with others. Mobile channels are again a natural environment for this type of influence, particularly with the support of mobile apps (and wearables) that not only track user sports achievements and personal scores, but also stimulate friendly competition and interaction with other community members. In this case, the ZMOT concept was adopted for the purpose of building the brand and refreshing its image.

Google			
Case study description	**Objectives**	**ZMOT activities**	**Effects**
Propagation of the Android platform, implemented in 2007 and gaining popularity among users. The system is still burdened with problems, mostly due to the compatibility issues resulting from the vast number of devices. The main challenge is to provide reliable information on the product to the same class of users that decides on the present success of the system (Google 2011).	• Finding new channels for reaching and influencing customers in the ZMOT phase • Transforming the vast community of fans and users into an 'army of Android evangelists' • Equipping the 'army' with effective instruments for performing their system popularization mission	• Encouraging the users to freely modify the Android logotype • A series of video clips presenting new products in amusing and hilarious situations • A contest for best cookies baked to resemble the Android logo • Implementation of instruments for careful determination of user opinions • Monitoring of media, with particular attention to mobile channels	• Media monitoring shows that 85% of user comments present positive attitudes • The explosive growth of user base; between May 2011 and September 2012, the user population increased from ca. 100 million to nearly 500 million
Nike			
Case study description	**Objectives**	**ZMOT activities**	**Effects**
Nike's marketing strategy was originally based on popular sports figures – their recommendations were the main element of building the company image. At present, Nike displays a strong emphasis on social media and mobile channels of communication with customers (Nike 2013).	• Looking for new channels of communication with users • Refreshing the company image among existing customers, and attracting new clientele • Weakening the impact of smaller brands • Utilizing mobile devices in the process of increasing the brand awareness • Building an active community	• Opening a social platform designed to help users set up their personal goals and enter into friendly contests with others • Developing a mechanism for exchanging personal achievements and scores on multiple social platforms, with strong emphasis on mobile access • Offering shareable promotion material designed to stimulate the users to take up challenges	• Considerable increase of user involvement in community activities • Increase of Nike brand awareness • Weakening the position of smaller brands

Figure 5. ZMOT in mobile channels – selected case studies

To supplement the above, let us quote the results of a study on the ZMOT as applied in the context of real estate marketing in the U.S., conducted jointly by the National Association of Realtors and Google company. The report focused on the examination of roles of the new media in the process of homeownership investments. The report was aimed to:

▪ better the understanding of the real estate market,

▪ examine the purchasing process as applied to the real estate market,

▪ examine the effects of ZMOT on the market under study,

▪ determine the impact of mobile technologies and social media in the process of searching for real estate information.

The report clearly shows that mobile channels are an important element of the ZMOT process - 77% of customers use mobile channels at home, 31% - at work, and as much as 28% - when waiting in line. The report also confirmed the importance of searches (both local searches on the Web and searches in social community platforms. In addition, (NAR 2012):

▪ customers will perform an average of at least 11 searches prior to the purchase,

▪ 89% of new home shoppers use a mobile search engine at the onset and throughout their research,

▪ 68% of new home shoppers use mobile applications.

▪ 51% of users utilize mobile devices in the process of reading up general home information,

▪ 21% of users interact with mobile communities (reading the reviews),

▪ 28% contact the broker on the phone.

Based on literature studies and case studies of selected applications in the marketing area, the authors identified a number of factors that impact customers' purchasing behaviors and their purchasing decisions. Those factors may be expressed in two distinct aspects, namely:

▪ technical, related to the use of innovative instruments and services offered by social media and mobile communities,

▪ behavioral, related to changes in approach to the realization of particular elements of purchasing behaviors among members of mobile social communities of users (consumers).

Fig. 6 presents a model representation of the above factors in subsequent stages of the purchase behavior of mobile consumers, in the context of the ZMOT concept.

	Location based services	Mobile coupons and time-limited deals	Social service channel
	In-store mobile support and navigation	Mobile/location based alerts	Mobile service channel
	Mobile purchase information (push services)	Transactions through social media	Direct C2C recommendation within social network
Social stimulus	Social purchase information (push & pull services)	M-commerce applications	Purchase feedback
Mobile stimulus	Multichannel and hybridization of information (multiscreen)	Mobile payments facilitation	Customer experience sharing (mobile and social channel)
Initial consideration	Active evaluation	Purchase closure	Postpurchase
Stimulus	ZMOT	FMOT	SMOT

Figure 6. Behavioral and technical factors of influence and their impact on consumers' purchase behaviors, in the context of the ZMOT concept – a model approach.

The model presented on Fig. 6 is based on the authors' own research, literature studies, and observation of purchase patterns. The main assumption used in formulation of the model is to provide the simplest possible presentation of factors directly related to the social media and mobile community environments. The model distinguishes four key phases. The first phase of each purchasing process comes in the form of a stimulus, originating either from the close proximity network (social media) or from mobile communication channels. This phase of the process represents the initial consideration of a potential purchase. The next phase, and the most important in the context of this study, is the phase of active evaluation and – at the same time – the ZMOT. This phase involves in-depth analysis of the research subject – both through push-type information (gathering responses to direct queries) or through pull-type search for information. In the authors' opinion, the most crucial elements of this phase are e-communities and mobile channels, as the most readily available and reliable sources of information. The remaining two phases represent the act of purchase (closure) and the post-purchase behaviors. In both cases, the predominance of mobile technologies is evident, and social media play a supportive role. Proper combination of the two elements results in purchase closure and, at the same time, limits the extent of post-purchase dissonance.

The model presented and described above may be used as a starting point for further analyses. Detailed results of such analyses, together with determination of specific mechanisms, through which the factors identified above effect their impact on the purchasing decisions, will be presented in subsequent publications.

6. Conclusions

In conclusion, mobile technologies seem to constitute an exceedingly important element of the ZMOT concept. In the course of the purchase process, customers actively research product information on the Web (often with the use of mobile channels and devices), and contact friends and relatives to gather opinions on the product planned for purchase. At home, stimulated by broadcasts of TV/radio commercials, they employ additional devices (tablets, smartphones, etc.) to look up additional information on the advertised product. In this context, proper synchronization of information presented across multiple screens (devices), and particularly – the optimization of mobile channels – seem to constitute a precondition for reaching the

customer in the most appropriate and effective manner. Improvements and refinements in this respect should involve the following:

- optimization of mobile webpages: fast loading, to ensure proper display of content across various mobile devices, optimization of page layout and page sizes, for fast browsing of the content,

- continuous monitoring, testing and improving of individual elements of webpage display: navigation, contact forms, logging screen, product presentation windows, etc.,

- monitoring of user webpage behaviors – separate tests should be performed with regard to mobile versions of company Web content,

- designing coherent content for each channel of communication used, to make them meet the specific boundary conditions of each medium (each channel is governed by a different set of rules and accentuates different elements),

- emphasizing the need for intriguing, surprising and educating the user in the process of designing all the above elements,

- inclusion of gamification and viral elements, based on the assumption that highly entertaining content is more comprehensible and more prone to spontaneous spread (shareable).

Based on case studies and a postulated model of behavioral and technical aspects of purchase behavior, the authors demonstrated and substantiated the role of ZMOT in mobile consumer communities. Further research efforts on the role of ZMOT in the mobile context will be focused on expansion of the model and on the following research problems:

1. Which traditional and new media (particularly mobile) are favored by consumers in the course of their purchase decision processes?
2. What are the motives behind users' search for information on mobile media?
3. Which moments of the purchase process are best suited for the use of mobile channels as part of the ZMOT concept?
4. Which sources of information have the most decisive impact on customers' purchasing decisions?

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Information Seeking and Sharing During a Flood - a Content Analysis of a Local Government's Facebook Page

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Abstract: In times of floodings and other natural disasters, timely and adequate information to the concerned public is vital to delimit damages, avoid panic, or sometimes even to save human lives. Lately, social media, such as Facebook, have become a vital and powerful channel for crisis communication, as a result of its remarkable diffusion. Recent disasters have shown that people turn to local government's Facebook pages for information in a time of crisis. So far, few studies exist about what kind of information citizens seek and share on Facebook when a flood occurs. The purpose of this study is therefore to identify both the citizens' requests for information from local government during a flooding event as well as the information that they share. An exploratory study of the communication on the City of Calgary's Facebook page during the flood in June 2013 was performed. Content analysis of user posting was applied in order to identify recurrent topics. The results show that people in the early (acute) phase search for instructive information that would help them decide how, when, and where to evacuate. Information on road closures, preferably in the form of maps, was also a common request. Moreover, there were frequent requests for adjusting and reassuring information on the quality of the drinking water. Throughout the event, many also displayed an altruistic behavior as they wanted to know how they could volunteer or donate utilities to the victims. This was the most predominant theme in the user postings along with expressions of gratitude to the city's mayor, emergency workers and volunteers. It is also apparent from the number of user postings that people turned to the Facebook page to seek for and share information in the initial stage of the flood.

Keywords: Social media, Facebook, Disaster management, Flood, Crisis Communication, Content analysis.

1. Introduction

There is an ongoing debate whether natural disasters such as floods, droughts, heat waves, and tornados are in fact increasing in number and severity, and if so, if climate change is the reason for it (IPCC 2012). Regardless of the conclusions, there is a constant need to improve disaster management to prevent, predict, and handle the events that do occur. In 2013 alone, a number of severe floods took place. Major floods developed, for example, in eastern Australia in January, in Central Europe in late May-early June, in North India and Alberta, Canada in June and in Colorado, USA in September (FEMA 2014; GDACS 2014).

Once a flood or any other natural disaster strikes or is highly likely to occur, it is essential to reach as many of the public as possible with timely and accurate information to protect people and property, avoid panic or even to save human lives. Prior to the Internet, traditional media such as printed newspapers, television and radio where the main sources of mass communication in a time of crisis. Lately, social media such as social networks (e.g. Facebook), blogs and microblogs (e.g. Twitter) have emerged as complementary channels for crisis communication (Coombs 2012). Social media with its user generated content and high degree of interactivity have enabled individuals to "freely send, receive, and process content for use by others" (Aula 2010:43), also during the course of a disaster. However, there are also challenges involved in the use of social media as channels for crisis communication, such as how to control that mis(and dis)information and rumors are not spread (Coombs 2012) or how to know what information the public request.

Although there is a growing body of research about social media and crisis communication, few studies have analyzed the information content from the users' perspective. In the light of the frequent flooding events, this study redresses this lack by providing a basis for developing guidelines to be used in local governments' crisis communication on Facebook as well as for future studies in the area. The aim of the study is to identify predominant information needs in the course of a flooding event, or more specifically to investigate *what kind of information the citizens share and request at a local government's Facebook page during a flood.*

2. Literature Review

There are still relatively few studies that have focused on the information content of local governments' Facebook pages during a flood. However, research about social media for crisis communication in general has rapidly gained ground in recent years. The literature review is divided into two sections: social media usage in crisis communication and information seeking during a disaster.

3. Social Media Usage in Crisis Communication

Few innovations can match the rapid diffusion of social media, such as Twitter, Facebook, Instagram and lately Google+. Especially Facebook has had a remarkable uptake, both among individuals and in recent years also among organizations. In some countries more than half of the population is Facebook users; e.g. Sweden and UK (Internet World Stats 2013). Facebook has become deeply interwoven in the daily lives of many people. Especially young people often visit Facebook every day or even log in habitually every time they open a web browser (Denti et al. 2012). Although there are differences between countries and ages, the trends are clear that social media are becoming ubiquitous, a development that is facilitated by the increased use of smartphones.

In the wake of the massive popularity among the public, governmental agencies are recognizing Facebook's importance as a communication channel. Organizations strive to reach their target groups and to be "where they 'live' online" (Hanna, Rohm & Crittenden 2011, p. 265). Governmental agencies at national, regional and local levels are therefore now incorporating social media with their daily operations. The simplified opportunities to ask questions, request or present information, give comments and criticism can help increase citizen participation and e-democracy (Aula 2010; Bertot, Jaeger & Grimes 2010) and strengthen the organization's identity and relationships with their stakeholder (Ayu & Abrizah 2011).

Also in crisis communication it is important to use social media. Facebook, for example, might be particularly convenient for the users as they are presented with the news feed without having to search for crisis information on different websites (Bird et al. 2012). However, it is vital to have established a presence in these channels *before* a crisis occur (Coombs 2012). An already ongoing communication increases the credibility and authenticity of the organization's crisis information (ibid.). Earlier studies show that social media effectively can support information sharing and communication during a crisis (e.g. Tyshchuk & Wallace 2013). Social media may facilitate the public's engagement in information milling, in obtaining necessary aid, and receiving accurate information. The use of social media might also reduce the number of non-emergency requests by telephone, thus allowing for more efficient use of emergency resources (Tyshchuk & Wallace 2013). Also, social media like Facebook may enable two-way communication between disaster response teams and the public, where the latter acts as informations brokers that gather and spread relevant information from different sources (ibid.). Well managed, Facebook communication can even strengthen an organization's relationship with its followers in a time of crisis (ibid.).

There are obviously also risks and drawback with the usage of social media for crisis communication. First of all, social media cannot replace other channels such as television, radio and governmental websites. Even if there has been a steady growth in social media users, many people are still not to be reached this way. Second, not all social media are suitable for crisis communication and also those that are, have their flaws as they were not initially intended for this type of usage (Reuter, Marx & Pipek 2011). In addition, Coombs (2012) stresses the need for having adequate resources to handle the increased requests for information that rises during a crisis, as the presence in social media also brings expectation for interaction. However, perhaps the greatest hazard is the risk of inaccurate information. The information flows need to be thoroughly monitored to detect incorrect or improper user postings that might cause rumors or criticisms (Aula 2010; Coombs 2012). Tyshchuk and Wallace (2013, p. 809) emphasize that:

> *During extreme events, the public craves information and it is vital to provide accurate information to the public in order to facilitate the appropriate protective action. Emergency managers need to continuously monitor the information flow on social media, specifically the emergency relevant inquiries generated by the affected population.*

Erroneous information or rumours have occurred during earlier events, especially during the most acute phase (Bird et al. 2012). Oh, Agrawal and Rao (2013, p. 421) stress the need for prompt response systems, managed by the emergency response team, that "[…] refute the wrong information and provide citizens with timely, localized, and correct information through multiple communication channels […]". However, there also seems to be a 'self regulating' mechanism in social media where the community assists the official moderators in quickly correcting any wrong information (Reuter et al. 2011). Vieweg et al. (2008) call this "socially-produced accuracy".

4. Information Seeking During a Disaster

Crisis and disaster information need to be timely, accurate, unambiguous and localized (Oh et al. 2013). An organization need to respond quickly, present consistent information ("speaking with one voice") and to disclose all the information the stakeholders need to know (Coombs 2012). Crisis response content can be divided into instructing information, adjusting information, and reputation management (ibid.). Instructing information is vital when a crisis may endanger the lives of humans. They then need to know how the crisis might affect them and what they need to do for protection. Adjusting information helps people coping psychologically with the crisis by, for example, explaining what has happened. Reputational management finally, concerns the repairing of relationships that might be necessary after a crisis.

Relatively few studies have focused on the information content on Facebook pages in general, and particularly on the information content on governments' Facebook pages in time of flooding. Ryan (2013) however, interviewed 27 citizens from two Australian communities that had suffered from two recent floods about how they got information and what information they were seeking. Four groups of information sources emerged; other people, media, the internet, and official agency channels. While the information-seeking behaviour regarding choice of source varied between the respondents that had suffered from a slow developing flood and the respondents that had experienced a flash flood, the information sought was similar. The prevailing need was to get information on what was happening and when the flood would peak, hit or reach the whereabouts of the interviewee and how this would affect them. Also, many people were concerned about their family and friends. Furthermore, people were seeking information regarding road closures, how workplaces fared and when the electricity would be functioning again (Ryan 2013).

Bird et al. (2012) performed an online survey of the use of Facebook pages during the floods in Queensland and Australia 2010/11. In line with Ryan (2013), they found that the most common reason for usage was to get information on their own community, followed by the wish to get information on family's and friend's communities. Two additional motives were to share information or to offer help (Bird et al. 2012). Practically all of the respondents in Bird et al.'s (2012) study found the information on Facebook useful. Bird et al. (2012) argue that Facebook (p. 32) "can be used to effectively and efficiently disseminate emergency information on: the occurrence of hazards; location of evacuation centres and road closures; fundraising opportunities; volunteering; and reassuring people about the safety of family and friends".

Tyshchuk and Wallace (2013) studied the use of social media during the 2011 Japan tsunami in a small Californian community that was also affected by the tsunami. A Facebook account was set up that was effectively used to disseminate warnings to the public as well as to correct inaccurate information provided by the national media. Also, social media were utilized to confirm information by placing inquiries. Furthermore, people sought information about how to get emergency aid. Tyshchuk and Wallace conclude that people during extreme events use social media to gather information about the risks and how to take protective actions. Earlier research thus indicates that Facebook may serve an important role in citizen-government communication, also during a disaster. Reuter et al. (2011) however, claim that Facebook is problematic in the sense that some organizations use it as a broadcasting service, and subsequently do not seize its potential for two-way communication.

Finally, while not studying information seeking during a disaster the study of Magnusson, Bellström and Thorén (2012) indicates some expectations on governmental information on Facebook in general. Their study of a Swedish municipality's Facebook page showed that the users requested information from the municipality about different matters. The users also reported service breakdowns (e.g. water leakages), shared useful information and appealed for new (or existing) services. Moreover, it was common both that users praised the municipality and that they posted complaints. Furthermore, many of the posting were categorized as "identity or community building".

5. Method

The communication on The City of Calgary's Facebook page during the Alberta flood in June 2013 was selected as a suitable case to study. Although there are shortcomings in using a single case, Yin (1994) recognizes that single cases can serve as foundation for future studies of the same phenomenon in other organizations. The city of Calgary was chosen as it was believed to be 'information-rich' and "manifest the phenomenon of interest intensely" (Patton 1990:171). Calgary had recently experienced a severe flood that was intensely

discussed on the city's official Facebook page. Data were collected by content analysis of user postings. Content analysis is well suited for identifying recurrent themes in textual material (like user postings) as it "takes a volume of qualitative material and attempts to identify core consistencies and meanings" (Patton 2002:453).

Postings from 15 days, from June 20 to July 4 were written out and analysed in an iterative coding procedure. The data sampling period corresponded to the period during which a local state of emergency was declared. An open coding process was applied in order to identify, code, classify and categorize the content into themes (c.f. Patton 2002). Depending on the content, a posting was categorized into one or several themes. Furthermore, other peoples' comments on the user postings were briefly read to check for significantly different themes. Also, the comments were briefly checked to see how the city responded to user postings.

6. The City of Calgary/Alberta Flood Incident

In June 2013 the Alberta region in Canada suffered from weeks of heavy rainfalls. This culminated in flooding of several parts of Alberta, including the city of Calgary. A local state of emergency was declared in Calgary and twenty-six communities were evacuated, affecting 111, 000 inhabitants (The City of Calgary 2013). This was the largest flood in in the city's modern history (ibid.). On June 24, three days after a state of emergency was declared, there were approximately 24,800 people that 'liked' the city's official Facebook page and that thus were able to see the postings in their news feed on Facebook.

7. Results and Analysis

An intense communication took place with a total of 520 user postings identified (accessed in December 2013). The users' activity were most intense on June 21 and 22, see figure 1, and then reverted to approximately the same level as before the flood in a week. Several themes or topics for discussion were discerned in the user postings. The most recurrent themes are presented in table 1. However, two identified themes are not included in the table as they were considered not to be applicable to further studies, namely comments on a recent tax surplus and comments/questions regarding the city's website that 'crashed' due to the intense traffic. Moreover, it was considered not feasible to categorize postings containing only photos along with posting with an unclear meaning. Almost 14 % of the postings were therefore labelled as "other".
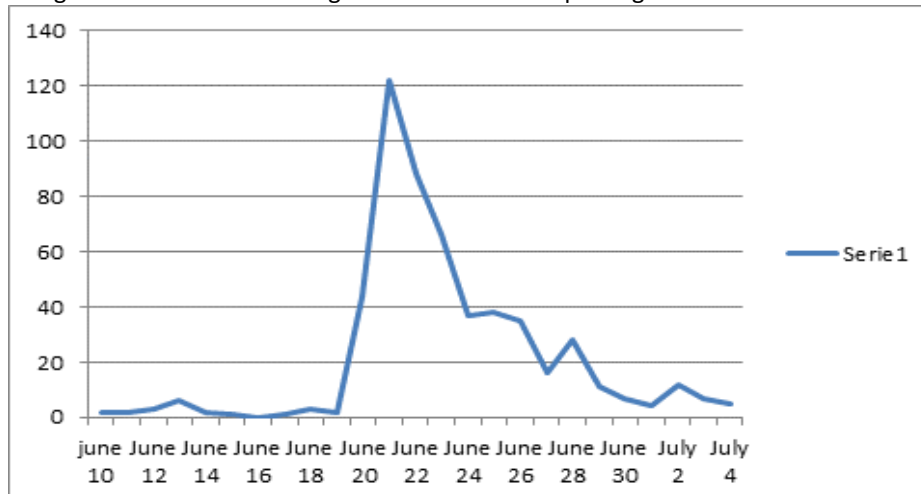
Figure 1: Frequency of user postings before and during the state of emergency

An apparent theme, consistent with Bird et al.'s (2012) findings, was the desire to help fellow-citizens. One of the very first user postings asks, "Do you need volunteer labor to help sandbag?" Almost every fifth posting expressed a desire to help out (by volunteering, donating etc.). People especially wanted to know how they could volunteer in protecting and restoring the city. An interesting finding was that a successful grass root initiative that connected requests for volunteers with volunteers, called YYC Helps, was formed from a Twitter message and forwarded to the Facebook page. Dedicated forums were created also to offer housing and these were frequently referred to on the Facebook page. One was a Facebook group called "I have space!". The group was formed early and attracted a large number of members in a short period of time. Several users also wanted to donate clothes, furniture, toys, other utilities or money. This topic too resulted in separate social forums as did initiatives to take care of pets and search for their owners.

Table 1: Identified themes in user postings

Themes	Description
Road closure	Information on which roads and bridges that were closed and open
Public transports	Information on functioning of, and changes in, public transports
Power Supply	Information on power outage
Specific area information	General information on the status in a specific area
Evacuation	Information on proclaimed abandonment of homes and businesses
Re-entering home	Information on when to re-enter and how (rules and advice)
Drinking water quality	Information about the quality of the tap water
Water restrictions	Information regarding proclamations to save water and "violations" of these
Volunteering	Information on how to assist in the emergency response work, i.e. with carrying sandbags or in the clean-up
Housing	Information on places to stay for the victims of the flood
Donations	Information on how to donate food, clothes, money and other utilities
Pets or animals	Caring for pets and animals
School closure	Information on the closure or opening of schools
Workplace status	Information on whether the workplace is open and possible to reach
Praise	Expressing gratitude to the city and/or volunteers
General Greeting	Wishing people to stay safe and statements of fellowship
Complaints on the city	Expressing criticism of how the city handled the disaster
Complaints on others	Expressing criticism of the actions of others
Regular services	Information about governmental services (e.g. emptying of garbage cans)
Marketing of businesses and events	Businesses offering their services or information on up-coming events
Requests for help	Asking others for assistance (e.g. with evacuation)
Family and friends	Concerns about family and friends

Another common theme was to praise the city's emergency workers and volunteers. More than 10 % of the postings conveyed satisfaction with how the disaster was handled. In particular, many expressed their gratitude to and admiration of the mayor. Naturally, there were also also complaints, although not in great numbers. Only about 2 % of the postings were critical of the city. People were more annoyed with businesses that raised their prices during the disaster or the conduct of other citizens. An issue that caused irritation was non-compliance with the water restrictions. The watering of lawns (!), use of fountains and washing of cars were criticized in the user postings:

> *Love how there is a water restriction on right now AND my neighbour is washing his perfectly clean vehicle that has been sitting in his garage…can you say rude!!!*

About 15 % of the postings concerned infrastructure such as the closure of roads and bridges, power supply, public transports and the general condition in specific areas. Especially maps were requested. The results show that it is vital that this information is updated often and that the time of the update is clearly specified. Peoples' need for timely and reliable information on infrastructure was apparent also in the studies of Bird et al. (2012) and Ryan (2013).

Other areas of concern were the evacuation and re-entering of homes and businesses. People were also worried about the quality of the drinking water. Although the city kept reassuring people that there was no need to boil the water, the question was still raised frequently. This may exemplify the need for what Coombs (2012) calls 'adjusting information'. Further topics of concern were the status of regular services such as garbage collection and the closure of schools and workplaces. Mainly towards the end of the period there were also examples of enterprises marketing their business in relation to the recovery and clean-up efforts. Notably, only a handful of the postings came from people that requested help (e.g. with evacuating) or were concerned with the safety and whereabouts of family and friends (c.f. Bird, Ling & Haynes, 2012).

In addition to identifying themes, different usages also emerged. The predominant usage was to *request information* (nearly 45 % of the postings) while approximately one out of eight postings was *sharing information* (e.g. about road closure). Moreover, a small number of people used the Facebook page to *express*

opinions on matters related to the flood, for example, how a recent tax surplus should be used. Several postings also had the character of *community building.* As mentioned earlier many praised the city and the volunteers, others posted general greetings to "stay safe" or statements such as "I'm so very proud to be a Calgarian". The phenomenon of using the local government's Facebook page to strengthen and confirm the community (and/or the own identity) was apparent also in the study of Magnusson et al. (2012). Furthermore, in line with the findings in Tyshchuk and Wallace (2012), there were also examples of people acting as *information brokers* or using Facebook to *confirm information*. Finally, it may be noted that users continuously kept on answering others' questions. The City of Calgary responded to some of the postings although not frequently, and particularly not during the first days of the flood.

8. Conclusions and Discussion

The results of this study support earlier studies regarding the need for information on infrastructure issues, such as road closure, power supply and public transports. Any city or municipality ought therefore to be prepared to quickly distribute, and frequently update, this type of information when a natural disaster strikes, preferable also in the shape of (correctly time stamped) maps. What were not mentioned in earlier studies were peoples' concerns about the quality of drinking water, perhaps because many countries are used to bottled water. The results of this study show that it is vital to provide information on drinking water quality recurrently. Organizations should also be prepared for questions regarding 'everyday life' such as if schools and workplaces are closed and for how long.

A striking finding is that people want to help out, rather than being passive observers. This supports the results of Bird et al.'s (2012) study. An interesting observation is that discussions and needs expressed on the Facebook page regarding how to help out, quickly became dedicated "spin-offs" into separate Facebook groups or similar. This self-organizing mechanism among the users most likely helped the city to keep its Facebook page manageable, while people interested in a particular topic easily could spread and find information in the dedicated fora. A conclusion of this study is thus that the public wanted nothing more than to help their fellow citizens and Facebook provided an efficient means to organize their efforts.

Although the majority of the postings requested information from the city, there were also many examples of information sharing and (fulfilled) requests for confirmation of information. As in the study of Magnusson et al. (2012), there were also plentiful examples of community building efforts that may serve not only to strengthen the citizen-government relationship (Tyshchuk & Wallace 2013) but also as 'adjusting information' that help people cope with the disaster (c.f. Coombs 2012). These examples illustrate the benefits of Facebook as a channel for crisis communication as does the significant increase in user postings during the first days of the event. However, this study also partly confirms the concerns of Reuter et al. (2011) namely that Facebook often are used by organizations mainly as a broadcasting channel rather than for two-way communication. Only a few user postings were commented on by the city of Calgary during the first 3-4 days. This shows that it is difficult to handle the onslaught of questions in a sudden disaster even if an organization ideally should be prepared (Coombs 2012). The city may also have decided to answer in other ways, e.g. in media interviews, in the city blog, at the website or as status updates on the Facebook page. Furthermore, other users often answered the requests for information. The city's strategy seems to have been to communicate mainly by status updates referring to postings on the city's website or news blog, thereby ensuring consistency or what Coombs (2012) calls "speaking with one voice". The numerous postings expressing gratitude to, and pride in the city's emergency management indicate that this was a successful approach.

9. Limitations and Further Studies

There are several limitations to the study. First, the empirical data only consist of user postings during one event and from one organization's Facebook page. Other governmental Facebook pages in the area might have been equally, or more used for government-citizen or citizen-citizen communication during the event and contain other type of requests. Some themes may thus have been handled 'elsewhere'. Also, only user postings, and not comments on user posting or the city's status updates, where included for in-depth analysis. The empirical data were gathered several months after the event took place and some of the postings may have been removed, for example, if the content for some reason had been deemed to be inappropriate. Furthermore, the coding was performed only by the author. Finally, it is reasonable to believe that peoples' need for information, and thus the information content at governments' Facebook pages during a natural

disaster will vary not only over time but also with the severity of the event and the preconditions in the local context (e.g. physical infrastructure, resources, demographics).

In order to suggest guidelines for organizations' Facebook communication during a flood, further studies are needed. The identified themes need be further grounded in empirical data. Also the content in the government's status updates and the reactions/comment on these ought to be analyzed to get a more complete picture. It may also be fruitful to compare the frequency of themes at a certain time with the timeline of the flood to see if it is possible to predict what questions will arise and when.

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Social Media as an Influencer of Public Policy, Cultural Engagement, Societal Change and Human Impact

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Abstract: Traditionally, social media was viewed as an online place where people went to socialise, meet new people, make new friends, share news and experiences, be consoled or celebrate in a virtual context. However, due to its increased popularity, social media sites have undertaken additional roles with increasing importance in today's society. The majority of social media users are young adults (89% of social networking users fall within the 18-29 age bracket) who regularly use this fora to inform their news, political opinion, consumer choices and social engagement. Social media provides opportunity for all to have their presence noted and their say listened to, which forms the basis of democratic society. However, in true democratic terms, sides can have opposing views, resulting in a dearth of opinion. In forming a consortium there will normally be two sides, those for and those against, Both entities will use media to convey their views and political stances, in an attempt to influence others, the latest of which is social media. Controversial items can be streamed via social media that otherwise may not see the light of day on mainstream sites, thus the platform can be used to increase exposure to a wider audience. To this end there has been a surge in enterprise involvement, ranging from ecommerce and consumerism, to charity and education, governmental and political bodies and campaign promoters. However, while government can adopt 'ownership' of many media conveyors, for example newspapers can be under the remit and/or affiliated to one particular party, social media is an open, uncensored platform for freedom of speech and expression of interest. This has caused much stress and concern for certain governments (deemed left-hand extremists) who seek to censor the oppositions' voice by means of media control. Some have been successful in media control (i.e. Chinese government and their tight controls over the internet, Venezuelan and Cuban Governments owning and controlling local TV and newspaper media) while others have decided the best approach is to embrace these tools, for example the U.S.A President Barrack Obama who is considered one of the top five people in the world to have a social media presence with more followers on twitter than celebrities such as Britney Spears, Cristiano Ronaldo and Oprey Winfrey to name but a few. Taking these factors into account, questions arise regarding how influential the interactions of individuals/groups are in forming and informing public policy, cultural engagement, societal change and human impact. This paper aims to show, through case studies, how important or influential individuals and groups become in everyday operations/decisions, how public opinion can sway government policy, how lobbying can be achieved online using social media, and how individuals can be effected by social media influence.

1. Introduction

Since the mid 1990's social media has exploded to become one of the fast growing phenomena of the 21st century. Social media is defined as *"a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content"* (Kaplan and Haenlein, 2010). One simplier definition is *"social media is an umbrella terms that defines the various activities that integrate technology, social interaction, and the construction of words, pictures, videos and audio"* (www.wikipedia.org), however the essence of social media is 'people communicating online'. A range of social media tools currently exist such as blogs, online chatrooms, wikis, podcasts, message boards, video and photo sharing sites, social networking sites, widgets, newsfeeds and virtual worlds to name but a few. Acceptance in social media can be measured via the growth of tools such as Wikipedia (approximately 4 million articles), youtube (100 million videos with a growth of 65,000 new videos daily), 200 million online blogs covering a range of topics, secondlife (1.5 million residents), facebook (727 million daily active users) and twitter (645,750,000 users with 135,000 new users daily).

Those who engage with social media tools do so for a range of reasons; for fun, to learn, to experiment, for curiosity, to communicate, to make money, to express themselves, to build a community, to make a difference, to influence others and so on. Millions of people have adopted new behaviours using social media, creating and joining virtual communities, organising political activities, promoting personal events, behaviour modification and business engagement. As Shirky, (2010) states *"social platforms have the potential to tap the great 'cognitive surplus' of society by using leisure time for creating content and collaborating, rather than consuming"*.

Social technologies are the products and services that enable social interactions to take place in the digital realm, allowing people to connect and interact virtually such as creating a message to be posted, adding content to online material, adding information about content, sharing preferences and promoting information to others.

Social technologies have several distinct properties that make them uniquely powerful and help explain their rapid adoption and high potential impact, namely:

- 'Social' is a feature, not a product. Social features can be applied to almost any technology that could involve interactions amongst people. A social component (a button to 'like' or comment) can be added to any IT-enabled interaction, suggesting an almost limitless range of applications

- Social technologies enable social behaviours to take place online, endowing these interactions with the scale, speed, and disruptive economics of the internet. Social interaction is a powerful way of efficiently organising knowledge, culture, and economic and political power. Freed from the limitations of the physical world, people are able to use social technologies to connect across geographies and time zones, multiplying influence beyond the numbers of people they could otherwise reach

- Social technologies provide platforms for content creation, distribution and consumption. They enable new forms of content, including co-creation and transformation of personal and group communications. Instead of a small number of editors or producers deciding what content is distributed, any social technology user can create, distribute, comment on and add to content. Thus, social platforms can extend the 'disintermediating' power of the internet to the masses. Content can become an evolving discussion, rather than a fixed product (Tapscott and Williams, 2006).

- Social technologies capture the structure and nature of interactions among individuals. A 'social graph' provides a map of the personal connections of a person or group, which combined with other data, can be the basis for inferences about groups and individuals. Social graphs capture important information about which group members contribute and have the greatest influence.

- Social technologies can be disruptive to existing power structures i.e corporate and governmental. Social technologies allow people to connect at a different scale to create a unified, powerful voice that may have significant impact on the ways in which dialogues are shaped and policy is made.

- Social technologies enable unique insights, by allowing marketers and product developers to engage directly with thousands of consumers and to monitor unprompted and unfiltered conversations. This can generate more genuine and timely insights info consumer preferences and trends. Social technologies also increase transparency, exposing more information about products and markets, spreading information about organisations and institutions.

(McKinsey, 2012)

Individuals have much to gain from using social media, deriving great personal satisfaction from creating and sustaining online relationships, re-connecting with older acquaintances, gleaning quality information, building communities/being part of virtual teams, self-improvement and esteem. The grouping of individuals, either formally (organisations) or informally (communities) can result in positive outcomes, such as affirmation in attitudes, communities, practice and policy, better consumerism, better information flow, dissemination and application which results in better decision making, efficiency and impact. Social technologies can also help communities collaborate in political and non-political ways. In contrast to the benefits, there are also risks associated with social media such as abuse, media bullying, expression of negative opinion, breaches of consumer privacy, data security leaks, and causing national unrest and disruption. There are many examples of enterprise and governmental censorship and restrictions of social media.

This paper presents a framework considering ways social media is used, though not as originally intended or predicted by early adopters. The remainder of the paper presents four case studies, where social media has been an influencer of public policy, cultural engagement, societal change and human impact. The first two cases consider the use of social media in government situations and the impact that these have had in creating exponential growth in the use of social media; there is seldom another phenomena in the world today that has sparked interest as these have (hence the heavy emphasis on the former two cases). The latter two examples

focus on social media use in non-governmental situations, one in charitable promotion and one considering social pressure. Information, not data, was collected from web publications, news/analysis articles and blogs to inform this framework, thus the paper is not designed to be an analysis of effect but a snapshot of occurrence.

2. Case 1 – Arab Springs 2011

The Arab world has a long history of struggle for political change, from leftist groups to Islamist radicals. The population in Arab countries more than doubled between 1975 and 2005 to 314 million (Arab Human Development Report, 2009) resulting in an abundance of young people (below aged 30). Political and economic development, coupled with widespread discontent over unemployment and low living standards, anger at the brutality of the security apparatus, rising prices, and corruption that followed the privatisation of state assets, erupted in 2011 in a series of anti-government protests, uprisings and armed rebellions that spread across the Middle East, a phenomenon known as the "Arab Spring". Resentment against the long rein of ageing Arab dictatorships (Egyptian leader Hosni Mubarak had been in power since 1980, Tunisia's Ben Ali since 1987, while Muammar al-Qaddafi ruled over Libya for 42 years) incited a number of revolts inspired by the successful uprising in Tunisia against former leader Zine El Abidine Ben Ali. Until 2011 most remained passive out of fear of the security services, and due to an apparent lack of better alternatives or fear of an Islamist takeover, but the birth of the "Arab Spring" called on the Arab population to take their country back, away from the corrupt elites, with the cry of "ash-sha'b yourid isqat al-nithaam" [The People Want the Fall of the Regime!] (Bowen, 2013).

Although backed in some countries by youth activist groups and unions, the protests were initially largely spontaneous, a situation that the security forces were completely unprepared for. The Arab dictators response to the mass protests was predictably awful, going from dismissal to panic, from police brutality to piecemeal reform. Attempts to disband protests by force fuelled the revolt, every funeral for a victim of state violence, deepened anger and encouraged more people to the street; people copied the tactics of the mass. Broadcast live on Arab satellite channels, the resignation in February 2011 of Egypt's Hosni Mubarak, one of the most powerful Middle Eastern leaders, broke the wall of fear and changed the region forever (Wikipedia, 2013).

Social media proved a powerful mobilisation tool that helped the activists to outsmart security forces and recruit for protests (for example the first mass protest in Egypt announced on Facebook managed to attract tens of thousands of people in just a few days). The effective use of social media to organise, communicate, and raise awareness, in the face of state attempts at repression and Internet censorship, was unsurpassed. Ninety percent of Egyptians and Tunisians responded to a poll that they used Facebook to organise protests and spread awareness (Huang, 2011). Furthermore, 28% of Egyptians and 29% of Tunisians from the same poll said that blocking Facebook greatly hindered and/or disrupted communication.

The influence of social media on political activism during the Arab uprisings has been much debated (for instance see Himelfarb (2012). Revolutions that started on Facebook alone were rapidly quashed by secret police, to the extent that in Egypt a prominent activist group stated "Do not use Facebook or Twitter" on the front and backs of their revolutionary material (Assange, 2011). However, further evidence outlines that social media use more than doubled in Arab countries during the protests (see data collected by the Dubai School of Government). Young people fuelled the revolts of various Arab countries by using social networking to release the word of globally. As of 5 April 2011, the amount of Facebook users in Arabian nations surpassed 27.7 million people (Huang, 2011) indicating that the constant growth of people connected via social media acted as an asset where communication was concerned. Through social media, the ideals of rebel groups, as well as the current situations in each country received international attention. While it is still debated whether social media acted as a primary catalyst for the Arab Spring to gain momentum and become an internationally recognised situation, it has still played a crucial role in the movement (Himelfarb, 2012).

3. Case 2 – Venezuela

Venezuela is a South American country with a population of 28 Million of which, by 2011-2012, an estimated 32% were registered on Facebook and 21% on twitter making the use of social media in the country one of the highest in the world (Reardon, 2011);(internetworldstats.com). According to MVF (n.d.), Facebook is the most

popular social networking site in Venezuela which receives 9.4 billion page views every month, and users spend an average of 36 minutes per visit.

Venezuela's current government (which started in 1998) is a form of socialism known as "21st century socialism", a term used to describe the unique interpretation of socialist principles purported first by Heinz Dietrich in 1996 (Wikipedia, 2013). One of the important applications of this type of government is open opposition of capitalist regimes, in particular that of the United States of America, which is one of the main recipients of the principal export product produced in Venezuela (oil) and is also the main source for all import products that are not produced in the country.

Government policies which actively oppose capitalism generate great discontent among the population to the point that in 2002, after the government approved by decree 49 economic laws, the population organised a protest in front of the government palace. Turning violent, when protesters were confronted by a mob of government supporters, this resulted in 19 deaths and more than 100 wounded. Another outcome was temporary removal of Hugo Chavez (Head of Government) from power but that ended when military powers intervened and reinstated Chavez; in 2003, the opposition organised a general strike that lasted 63 days and in 2004 managed to organise a presidential recall referendum which was defeated in August of that year (EFE, 2013) assuring that the current socialist government led by Chavez, would stay in power.

From that point onward, the government began to nationalise all industries in the country including the media (Press, Radio and TV). Media nationalisation started in earnest in 2007 with the closure of privately owned TV station RCTV (Carroll, 2007), reaching its highest point when the government acquired the last independent media outlet (TV and Web), Globovision, in August 2013 (O'Reilly, 2013). During this period there were some famous cases of media repression and government block of media access that culminated with the opposition calling out the government in the media in 2013, as reported by Smilde and Perez Henaiz, (2013).

During and following the takeover bids, social media in Venezuela became popular in terms of public participation in the political picture of the country; sectors inside the opposition began to make their online presence known via social media websites and the population started to actively participate in social media use by expressing opinions on political aspects and governmental policies. The main contributors were "dolartoday" established in 2010 (dolartoday.com) and "lapatilla" (www.lapatilla.com) (also 2010); both of which had presence in Facebook and Twitter in addition to their own website. In addition, the concept of blogging, with blogs such as "Caracas Chronicles" commented by Francisco Toro and Katy, "The Devil's Excrement" by Miguel Octavio, "The End of Venezuela as I know it" by a Venezuelan University Student and the anti-Chavez student movement (venezuelanalysis, 2013) became notably popular.

The Government and its supporters, have also embraced social media, notables are Aporrea.org which was created in May 2002 as the web site of the "revolutionary popular assembly", with a purpose to fight against the "burguesia golpista". In 2006, with a new design and subsequent journalism awards, this website became an important site for news distribution and pro-government opinion (aporrea, 2013). Also important are AloPresidente.gob.ve which started in 1999 as a Radio Show and which was described as an unprecedented event in Venezuela and Latin America when the President himself moderated the show and took calls from the general population. In 2000, this program was televised for the first time and it also has a web presence (alopresidente, 2010); antiescualidos.com (www.antiescualidos.com) which was one of the first and most important pro-chavez sites in Venezuela and Venezolana de Television (http://www.vtv.gob.ve) which is the main state-run television station (Venezuelanalysis, 2013a).

After several failed attempts by the government to limit access to social media outlets (BBC, 2012), (Goodman, 2013), (Perez, 2014), (Freedom House, 2013), and due to *"Venezuelans being among the Keenest Twitter and Facebook users in South America"* politicians have made social media central to their campaign strategies (BBC, 2012). Several of the sites representing both sectors of the conflict (pro-government and the opposition) in both web and social media format, have gained status in the eyes of the population becoming the main way for them to reach general population with their message, trying to sway them into taking sides in the on-going conflict between the government and the opposition.

The principal government players in the media and social media "war" are (now defunct ex-President) Hugo Chavez, who opened his twitter account in 2010 and by his death in 2013 had accumulated over 4 million

followers reportedly making him the second most followed Head of State in the world after Barack Obama (Robertson, 2013); current president, Nicolas Maduro, with 1.6 million followers and Diosdado Cabello (president of the National Assembly) with 0.8 million followers (twitter.com). On the other site of the political picture, the opposition leader Henrique Capriles (governor of Miranda State and ex-presidential candidate representing the united opposition) has 3.8 million twitter followers (twitter.com), and his own internet TV Show/channel (capriles.tv) used to communicate his message and ideology to the population in view to the presidential election in 2013 and the Venezuelan Government Monopoly on media coverage in the campaign (Devereux and Pons, 2013).

In Venezuela, social media is currently the only impartial way for Venezuelans, in the country and abroad, to get impartial news, biased and un-biased opinions and to vent their own opinions and frustrations with the everyday events happening in the country.

In February 2014, the use of social network took another turn in the country when the Venezuelan population took the streets to support a pacific protest staged by the student movement to complain against the increased level of insecurity and violence in the streets of the country, it is reported (Blanco 2014) that Journalists, Software Engineering and Internet professionals alike gaze in amazement at the growth index that twitter has experienced in the country. It is also reported Twitter is eclipsing the self-censure imposed in the media by their "press bosses" when trying to follow government policy on social media usage that aims at "not inciting violence through the publication of hostile images".

In the face of the government media takeover (directly or indirectly through the publication of "laws to regulate content"), the Venezuelan people has gone to the web, and specifically to social media to obtain, and to some extent participate through individual expressions of opinion, in the reporting of independent and unbiased news concerning the social and political aspects of the country. To this effect, social media sites dedicated to the publication of news articles, read more like a newspaper 'letters to the editor section' than a place to socialise. Both sectors use their dedicated portals to either express opinions in the form of articles or pieces of news which are then discussed by the general population through the comments section created by the sites to enable social interaction, this has become the primary form for Venezuelans to express their opinion regarding the issues that affect the country today.

4. Case 3 – Save the Children, Charity Organisation

In early 2012, Save the Children (www.savethechildren.net) published a report entitled "A Life without Hunger: Tackling Child Malnutrition," which highlighted the key role of nutrition. Realisation that the issue of malnutrition (responsible for 2.6 million child deaths around the world per year) was not receiving appropriate funding or a prominent place on political agendas, Save the Children wanted to raise public awareness to influence thought leaders and decision makers. As part of the promotion strategy a social media campaign was created.

Seeing Twitter as an ideal hub for international interaction, Save the Children planned a multi-lingual, global Twitter conference, or tweetchat. Adopting the hashtag #HiddenCrisis, users around the world could participate in the online conversation, designed to last over 12 hours so that people in all time zones could get involved. In addition to Twitter, Save the Children used a 'twebevent' platform as a second online space where the conference could be followed and those not on Twitter could watch the conversation. Save the Children used this platform to live-stream conference streams that were happening simultaneously.

Results of the online campaign were staggering:

- Using the hashtag #HiddenCrisis, the event reached 5.2 million people on Twitter in just one day, with over 43 million impressions
- The chat spanned 14 hours across 12 time zones
- The event covered 6 continents and at least 30 countries — including Pakistan, Bangladesh, India, Korea, Egypt, Kenya, Germany, Afghanistan, the UK, the US, Brazil and Mexico
- More than 50 international hosts such as the Rwandan Health Minister, celebrity chefs from the US, Indonesia and Australia, and World Health Organisation (WHO) Directors participated.

Many organisations use Twitter to enhance the reach and profile of events by having attendees live-tweet the details of the event, as a means to inform and engage online users. By making Twitter the actual location of the conference, Save the Children extended the way that organisations could use the platform.

5. Case 4 – Cyberbullying

Freedom of speech on the internet can have both positive and negative effects. Increased use of social media has also resulted in a rise in cyberbullying. As Hinduja and Patchin (2010) state *"Cyberbullying is quite common, can occur to any young person online, and can cause profound psychosocial outcomes including depression, anxiety, severe isolation, and, tragically, suicide".* Cyberbullying is bullying, harassment and victimisation conducted via social networking channels, often using blogs or social networking sites to post photographs or offensive or threatening comments about other individuals. Social exclusion can also exist where those not in an online 'friendship circle' can become isolated and left out. **Bullying is usually defined** by the experience of the person being bullied, while the past it may have been an option to remove yourself from the bullying situation, the fast past adoption of social technology offer more opportunities for bullying to take place.

Many anti-bullying projects have launched in the past few years since the deaths of teenagers such as Rehtaeh Parsons and Amanda Todd. Rehtaeh Parsons, attempted suicide by hanging on 4th April 2013, leading to a coma and the decision to switch her life support machine off on 7th April. Her death has been attributed to online distribution of photos of an alleged gang rape that occurred 17 months prior to her suicide, the sexual assault went viral, causing her distress which resulted in her death. Since her death her father, Glen Canning, has consulting with social media providers in a bid to make the Internet a safer place; The No Place to Hide Facebook page, https://www.facebook.com/noplacetohide) was established 16th September 2013. Amanda Todd committed suicide on 10th October 2012 at the age of 15. Prior to her death, on September 7, 2012, Amanda posted a 9-minute YouTube video entitled *My Story: Struggling, bullying, suicide and self-harm*, which showed her using a series of flash cards to tell of her experiences being bullied, blackmailed and physically assaulted. The video went viral after her death resulting in international media attention.

The National Society for the Prevention of Cruelty to children use their Childine service (https://www.childline.org.uk/Explore/Bullying/Pages/social-networks.aspx) to provide a number of advice articles related to bullying on various social media tools.

6. Discussion

Future value of social media depends on multiple enablers. For individuals the innate appeal of social interaction and the pleasure and intellectual stimulation that people receive in sharing knowledge, opinion and insight will be a continued driver of content and engagement. As new mobile apps develop to foster social information exchange (such as snapchat and whatsapp), and the social gaming culture expands (for example, Candy Crush was the number 1 iTunes download in 2013) the challenge for the IT industry is to keep social media fresh and appealing.

Organisations will need to embrace new technological application developments, becoming more creative and innovative in approaches adopted. Risk taking and experimentation will be needed to encourage organisations to adopt open and trusting cultures, where employees have the freedom to engage in social networking at work. As McKinsey, (2012) state *"Success in deploying social technologies to connect with broader communities will require the ability to create trust, a critical mass of participation, and positive community cultures and practices".*

Governments and world leaders have additional layers of pros and cons in allowing social media platforms. Being responsible for protecting information of every national citizen, individual lives can be effected by crimes such as identify theft, political unrest, military and security breaches and the acquisition of confidential records/communications. Thus, government personnel need to clearly understand the intended use of social media in a national and international context. They must provide leadership and guidance, support and control, security and privacy while offering freedom of speech and democracy.

While social media has the power to impact positively (such as Save the Children case) it can also cause much trauma and hurt if used inappropriately (such as cyberbullying). It also can be used as a tool to disseminate

messages intended to oppose political regimes and to organise the population to carry out the leg-work needed to bring down a government (Arab-Springs) or to simply oppose oppressive regimes that attempt to use social networks as their tools to alienate the population and transmit their message, by using social media to denounce abuse of power and political ploys that might not see the light of day in mainstream publications and news agencies (Venezuela).

7. Conclusion

This paper has considered the application of social media as an influencer of public policy, cultural engagement, societal change and human impact. Four cases have been presented; these highlight social media enablers (quicker communications, freedom of speech, increased socialisation and relationship engagement) and inhibitors (bullying, exclusion, fear, mental health issues). There are many academic papers, media articles and online posts that discuss operational processes, applications and impact of social media in a wide variety of situations. This paper has touched on the positive and negative aspects of social media, using cases as exemplars of practice. The paper does not claim to have included all influences of social media in public policy, cultural engagement, societal change and human impact; rather it provides a skeleton for further research and discussion.

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The Power of Social Media in Political Processes - A Case Study of Politics in Pakistan

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Abstract: In May 2013, the Pakistan Muslim League (Nawaz) (PML-N) political party obtained a majority vote in the Pakistan elections. This event unlike other events identified by other studies was preceded by anticipation through social media platforms of a different result. This anticipation in a post election space has lead to active discussion of election processes, the policies of new government, opposition policies, and the role of social media during the election. This paper focuses on this event taking a perspective on communications in the post election space. A novel opinion analysis approach developed by the principal author, focused on phrase level analysis, is applied to the context of social media platforms supporting Pakistan politics at the time of post-election in 2013. Two major parties communications are analysed (PML-N and Pakistan Tehreek-e-Insaf (PTI)) across YouTube, Twitter and Facebook. Networks of users and their inter-relationships across fora are established and topics of conversation are identified. These networks and topics of conversation help in understanding the point of view of the citizens on issues raised following the election process.The findings present within this paper suggest that in the post election space large amounts of political conversation occurring in social media has focused on: defamation of political parties by their opponents; the transparency of the election process; and current policies. From a defamation perspective there is nothing new in parties defaming others through communication channels but social media provides more direct channels to obtain, share and influence citizen perspectives. Through the analysis of conversation regarding the transparency of the election process, we can see an increasing reliance on social media to provide levels of political understanding, such that, where votes are made in opposition to what is widely believed to be the present state (according to social media) there can be widespread opposition. From a policy perspective conversations in the post election space centre on the 'what if's' in response to the public vote.

1. Introduction

Facebook, Twitter, YouTube provide examples of global social media platforms that have developed over the past ten years to now serve millions of users and process billions of user requests or search queries every day. These social media platforms enable individuals to discuss and share information about a wide range of aspects of their daily lives. Social media platforms offer opportunities to gain intelligence about what customers are thinking both inside and outside of branded spaces. In addition to growing organisational use, political organisations are also exploring how best to integrate such platforms as part of their citizen engagement or service delivery methods. For example, from a national perspective parties are discovering how to engage platforms in understanding the issues of most importance to members and non-members, such that these issues can influence party political agendas (Shirky 2011; Auvinen n.d.). At a local level government are using social media to promote local activities, to notify citizens of daily issues, and as a channel for citizen reporting of local issues (Mundy and Umer 2013).

Though the recent reporting of the impact of social media for the promotion of social activism in the recent Arab Spring movement may well have been exaggerated (Anderson 2011; Lim 2012). There is no doubt that social media can have an impact on political conversation and feeling (Eijaz 2013). The major affordance of social media platforms is that messages communicated across these platforms can become immediately apparent to the masses. This can enable individuals and organisations to promote particular political issues in an immediate form, for conversation to build, and for action to occur within short timeframes. In Pakistan (similar to other nations) a very clear growth in the number of social media users has been observed (Kemp 2013). Kugelman in 2013 identified the use of social media to support political communication as one of the five main uses of social media in Pakistan.

This paper focuses on the 2013 election in Pakistan in particular in relation to items of political conversation post-election. This election represents an interesting event to focus analysis of social media for political conversation around as it is widely perceived that the election result differed from the anticipated result on social media platforms (Waraich 2013), unlike as reported in other contexts (Tumasjan et al. 2010; Metaxas, Mustafaraj and Gayo-Avello 2011). As a result of this difference in perception, conversation within social

media platforms post the election result, demonstrates an interesting insight into how party political agendas can be influenced through such platforms.

The next section of this paper provides a critical review of related literature linked to understanding the impact of social media on global political conversation. This is followed by a brief introduction to opinion analysis and description of the novelty of the opinion analysis approach employed. The methodology used including the sample of conversations reviewed coupled with the method of determining the critical issues for exploration in the political conversations is provided before detailing analysis and discussion of the findings. The paper completes with a conclusion and description of future work.

2. Social Media and Politics in Developing Countries

From the large amount of research (Howard et al. 2011;Grech 2013;Waller 2013;Tumasjan 2010 etc.) which continues to grow focused on understanding the influence of social media on national level politics, four articles of most interest to this paper are selected. The issues raised in these papers provide lenses for analysing the selected case study of the 2013 Pakistan election.

As an early indicator of the impact on developing countries researchers have constructed papers around the impact of Facebook and other platforms on the Arab Spring. The nature of these papers varies from associating substantial political change with social media (Howard,et al. 2011) or discounting the scale of the impact (Anderson 2011). Lim (2012) takes a balanced view in tracking the timeline of activist movements since 2004. In this tracking Lim associates the majority of public activism with online discussion. Lim suggests that online social media platforms helped expand the potential for physical action through reaching those who had been disenfranchised through unemployment or disengagement with political policy. This suggests that political parties need to be aware of growing disengagement on social media platforms.

In 2013 Waller presented research regarding the political engagement of youth through online social media platforms. Waller investigated the use of Facebook for political dialogue finding that Facebook did not encourage the young into political conversation. Instead, the platform only provided a platform to extend the voice of those individuals who already engaged in political conversation. This may suggest that other than social media providing a platform for engagement of political parties in political conversation with the masses, only those individuals already engaged will be attracted into utilising this service.

Grech et al. 2012 in their analysis of a national political crisis (that of a vote on divorce in Malta) demonstrated that social media can disrupt traditional national hegemony. Malta a small island state is still heavily influenced by the Roman Catholic Church. This influence perpetuates the nations politics and the approach of the Media to issues which are religiously significant. Grech et al. through netnography and critical discourse analysis present the case that blogging and social media networks provide opportunities for individuals with views often classified as alternative by traditional media outlets, to network with others sharing the same views, thus helping to de-marginalise those perspectives. However, as in other circumstances of hegemonic disruption the traditional powers are working hard to re-establish their power through these new information channels.

Finally, in 2010 Tumasjan et al. presented research which detailed their analysis of tweets in the run up to a federal election in Germany. The research demonstrated that Twitter was used extensively for political discussion including providing an understanding of political sentiment. Through analysis of the political content within the tweets, Tumasian et al. were able to suggest that the quantitative analysis of political party keywords gave a clear indiciator as to who would be successful in the election process. This research obviously provides the hypothesis that individuals can through careful analysis of social media platforms gain an accurate prediction of future election results and sets the scene for the analysis provided in this paper.

3. Opinion Analysis

Opinion analysis (Pang and Lee 2008) is a field introduced in the mid-90's, which attempts to construct tools and techniques to determine the sentiment/opinion of an author from textual data. Research in opinion analysis started with the identification of an opinion in written text and has grown to more complex issues like: identification of opinion polarity; calculation of opinion strength; identification of opinion holder; and the identification of the topic about which an opinion is expressed etc.

Bag of Words (BoW) is the most commonly used technique for opinion extraction. BoW is a technique where each word in a document is represented by a separate variable numeric value (weight). Approaches using the BoW technique generally make use of the most commonly used terms and their frequencies during analysis. The BoW technique enables analysis of the vocabulary and choice of words as a way of communicating opinion and meaning in written text. In addition, the BoW approach requires word based resources i.e. lists, opinion based dictionaries, corpora, etc. in order to look up words encountered during analysis.

In extension to a basic textual analysis technique such as BoW (or lists) is the addition of a rule set. Rules such as negation or conjunction rules ('and', 'but', 'however', punctuations, question marks etc.) in the sentences can be defined separately as their usage can change the meaning of opinion oriented words. Similarly, phrases and opinion oriented idioms are also very important as a source of identifying opinion within textual data. For example; "He is a good and intelligent person." and "He is not good but intelligent.", in these two sentences 'and' and 'but' are changing or enhancing the opinion. Therefore, these kinds of rules have to be predefined for the analysis of written text within any language.

The novel opinion analysis approach (Asmi and Ishaya 2012) used in the context of this paper to analyse textual data on the social media platforms of individuals and organisations utilises a phrase based approach to build a greater understanding of opinions expressed in written text. Syntactic dependencies (Mel'cuk 1987) between words within textual data segments are constructed; with these providing insight into the semantic roles of different parts of sentences. The semantic roles further help in the analysis of textual data in relation to topics within the text. This data provides a basis for aggregation and summarisation of opinion orientation (positive | negative | neutral) and opinion strength (expressed as a real number between -1->0->+1).

4. The Context of Pakistan and Methodology

Since its independence in 1947 politics in Pakistan had essentially focused around two major parties, the Pakistan People's Party (PPP) and PML-N. Over this time power had switched interchangeably between these parties on a regular basis. However, more recently a third political party, PTI has emerged as a strong contender for governance. In relation to this paper, PTI used a clear strategy of social media engagement (compared to the other Pakistan political parties) during their election campaigns in order to obtain support. This strategy of promotion coupled with their other channels for campaigning led many online polls and political analysts to predict a major upset in Pakistan for the election. However, this result was not to be, when the results of the election were announced PML-N had gained control. The results of the elections demonstrate that there was a clear growth in the percentage of people voting for the PTI, with the PTI gaining a majority in one province of Pakistan.

These election results have raised many questions about social media being the catalyst of change in Pakistan. Change in Pakistan is believed to only be possible through directly influencing those individuals who are new to the process, young voters. This political emphasis on young voters is one of the key drivers for the growth of the social media presence of political parties. This sets the context for analysis of social media channels post-election in Pakistan determining how PML-N and PTI are adapting to the civic issues that are being raised. In addition, how PML-N having seen the rising popularity of PTI are attempting to persuade voters through political change and targeting particular demographics.

Over the period October – December 2013 textual data from the official social media pages (including Facebook, YouTube and Twitter) of two of the major political parties (PML-N, and PTI) in Pakistan were captured and analysed.

The data collected can be analysed quantitatively to understand:

- levels of activity on party social media pages;
- the number of active users.

A random sample of 1000 posts is used as the basis for further in depth analysis through the application of the novel opinion analysis approach (detailed above in Section 3) in order to determine:

- core themes of conversation;

- polarity and strength of opinion expressed;

- support and opposition to topics of discussion;

- opinion expressed in relation to political opposition;

- detailed content analysis of the messages contained in the tweet content (as allied to the core themes).

Analysis is used to determine any misuse of social media platforms in relation to defamation of political opponents. Focus is provided on whether these official channels are used primarily to provide support for perspectives on political issues or to discuss the policies of the opposition. This analysis helps to understand whether social media platforms are used as platforms for positive expression of views or as negative mediums of oppositional attack. Finally, levels of irrelevant discussion (in the form of items such as spam advertising) are also determined.

The data collected in this research only focuses on information available on the main pages of PTI and PML-N. The overall presence of these parties (other active party profiles) on social media platforms extends to approximately 177 pages for PTI and approximately 111 pages for PML-N. It is also noted as a limitation of this study that political conversation will also have occurred outside of official party social media sites. Indeed, the amount of conversation in party controlled spaces is likely to be a small proportion of the overall discussion of the core themes discovered.

5. Key items for Discussion

In the sections below analysis is provided for the dataset collected through a focus on the substantive issues that have arisen through the process. The initial section provides general statistical information in relation to the posts analysed. This is followed by discussion of: the community and its activity; the election result; political agendas covered by the parties; transformation of party policy; the overall 'feel' of party political spaces and the ways in which the parties engender community through their social media channels.

5.1 General Statistics

During the three months analysed on average 207 posts per day were published on the PML-N pages and 323 posts per day were published on the PTI pages. On average 480 users per day were actively involved in active discussion over both sets of pages. From the data collected it is observed that Facebook was the most active platform for both parties with 34% (based on number of posts) of conversation taking place on Facebook for PML-N and 23% for PTI. Facebook and Twitter have a feature to recognise and highlight the language used in each post. It is observed that according to the language tagging a small proportion of posts (2%) used Urdu (national language of Pakistan), 7% used a roman English translation (Urdu written in roman script), and the rest used English or a mixture of languages (something which both platforms do not recognise). In reality when analysed in greater depth a large proportion of posts used a mix of both Urdu and English presenting challenges for analysis.

Table 1: The breakup of the data based upon the proportions of Facebook and Twitter for both parties (PML(N) and PTI)

Social Media Platform	Proportion of Total Activity Recorded
PML-N (Facebook)	23%
PTI (Facebook)	34.3%
PML-N (Twitter)	16%
PTI (Twitter)	26.6%

5.2 Social Media Communities

It is noticeable from an analysis of the number of Twitter followers and the number of Facebook likes on both the PML-N and PTI sites that PTI have a more sizable community. However, taking the number of active users as a proportion of the total number of individuals liking or following one might suggest that there are many people who are interested in observing discussions on PTI pages, however, there is limited engagement in expression of their own perspectives on both parties (<6%). Many passive users may simply be observers for personal or professional reasons and may maintain political affiliation to another party. Popularity on social media does not always suggest personal affiliation or agreement with the policies. In addition, it is observed

that 26% of the active users on Facebook and 30% of the users on Twitter are organisational users, groups, and/or individuals representing an organisation or institution.

Table 2: Facebook statistics for activity of both parties (PML(N) & PTI) as per on April, 2014

Platform & Party	Likes	Active Users	Percentage (Active Users/Likes)
Facebook (PML-N)	277082 Likes	9734	3.5%
Facebook (PTI)	1054037 Likes	61059	5.7%

From analysis of the public profile data of participants on the official channels of both parties, it can be determined that active participants on the PTI pages have a younger age profile than active participants on the PML-N pages. In addition, the PML-N pages have a higher proportion of input from national and local media professionals, who provide positive input to policy making and provide critique of government policy and action. Over the period surveyed it was also noted that the leaders of both parties took different approaches in their use of the official channels with the oppositional PTI leader (Imran Khan) posting on average at least once per day, whilst the PML-N leader (Nawaz Sharif) posting on average once every three days.

5.3 Focus of Community Dialogue

There are two major areas of interest from a community dialogue perspective. The first is analysing the items directly promoted by official posts on Facebook and Twitter. The second is analysis of general public conversation in the context of the party platform. In relation to official posts on PML-N channels the majority of the dialogue relates directly to policy, performance, and community development. PML-N are keen to discuss the mechanisms they are putting in place to deal with civic issues for example: their approach to international relations; educational improvement policy; and new business support mechanisms. Official posts on the PTI channel reflect traditional oppositional party engagement with: civic protests supported; national concerns discussed; and community development methods highlighted.

Analysis of public perception through the novel opinion analysis approach provides a determination of levels of public support and condemnation for party policies and issues. From a PML-N perspective the sample set of data analysed provided insights into community perception around their educational and business development schemes with positive post discussion provided in approximately 75% of the posts related to their youth business loan scheme and 65% of the posts related to their laptop scheme. Discussion around these aspects provided approximately a third of the posts sampled. From a negative perspective discussion around US unmanned drone attacks (85%) and rigged elections (80%) demonstrated widespread condemnation in the posts discussing these issues for PML-N with many expressing direct support for the position of PTI on these issues. The negative aspects though provided approximately only 10% of the posts sampled. Finally, whilst the overall sample discussing this aspect was small (<3%), the PTI's promotion of *Dharna* (a form of protest movement) in response to civic issues was not well supported (70% negative response) in the posts.

It is noted that 5% of the posts analysed could be classified as spam posts, these are generally adverts from non-related organisations using party channels as a mechanism to advertise their products.

Table 3: Proportion of different topics analysed for opinion in overall data

Topic	Response	Proportion of Sampled Data
Youth business loan scheme	75% Positive	28%
Laptop scheme	65% Positive	7.3%
US unmanned Drone attacks	85% Negative	6%
Rigged Election	80% Negative	3%
Dharna	70% Negative	2.5

5.4 The Election Response

It is observed that discussion was still occurring within all party political channels around the result of the election. Indeed election based content still formed one of the most popular items discussed with party pages, especially those pages of the PTI. This is perhaps unsurprising given PTI have asked the Supreme Court in Pakistan for voter verification of stored thumb print data to ascertain whether perceived views around rigged elections are valid. This process coupled with the wider civic issues as detailed above have resulted through opinion analysis of the data sample in negative correspondence regarding the election process (80% negative discussion).

In addition, it was clear to see popular news related articles being transformed by the public to link directly to the election result and party opposition. For example, as stated above Pakistan's response to drones in Pakistan airspace was one of the most popular items discussed over the three month period in question. Individuals re-packaged this news story to suggest that PML-N had given permission for these drone strikes to take place with a perception that the majority of drone strikes were centred on attacking the Khyber Pakhtunkhwa (KPK) province.

5.5 Disrupting Agendas

It is clear from the rising popularity of the PTI party in Pakistan that celebrity (in the form of their cricket legend leader) mixed with a clear campaign drive focused around social media and populist political topics have impacted substantially on Pakistan's politics. To this end the greatest impact is potentially the impetus for other parties to start to use and think carefully about the fit of social media in their campaign spaces.

The three months analysed demonstrate how PML-N are growing in their use of social media thinking carefully about how they construct their news on social media pages and also demonstrating their understanding of the particular demographic they are targeting. It is interesting to see that large amounts of conversation on the social media pages of PML-N during these three months were specifically targeted at youth related support and benefit. It was also interesting to see interrelationship across the political divides with party policy on one platform spawning counter policy on the other platform. So where PTI in November were leading protests on Facebook about the Drones, PML-N in December were highlighting their foreign policy talking about their air capability and discussing national use and control of drone technology.

5.6 Love, Hate and the Feel of Party Spaces

Official party pages provide opportunities for individuals to express emotional responses. These emotional responses can vary between love and hate for the party or opposition and their leaders. Taking the whole sample set it is clear to see that individuals in whatever language they wish to express themselves are very keen to express their love for the political party (including love for party officials) they are supporting, and/or negative perspectives about the opposition. It is useful to translate this through opinion analysis into perceptions regarding the overall feel of party political fora such as those provided through these official Facebook, YouTube, and Twitter pages. In the case of PML-N and PTI there are distinct differences in the ways in which their pages are constructed and used. This translates into perceptions on the feel of the postings (both official party, news organisation and public). Analysis of postings on the PML-N pages broadly focus on policy related conversation and the promotion of their approaches to tackling civic issues. Analysing posts on the PML-N pages it can be determined that posts are less negative than posts on the PTI site. 34% of the postings on the PML-N pages have a negative feel, whilst on the PTI pages 61% of posts can be determined to have a negative connotation. This links directly to section 5.3 and 5.4 above which sees PTI pages primarily used as fora for political protest; therefore, negative in focus. Whilst PML-N is used as a platform for policy presentation promoting positive communications.

Table 4: 'Feel' of Party Platforms

Party Platforms	Positive Feel	Negative Feel
PML-N	66%	34%
PTI	39%	61%

5.7 Engaging the community

Social media normally involves a range of reciprocal communications and actions that are focused on building the social network community. It can be seen from the ways in which the two parties engage with the affordances of the platforms that PTI are the most interested in community building. The official PTI Twitter channel for example is linked in as a follower to thousands of other Twitter accounts, whilst PML-N is linked into less than one hundred. PTI use re-tweets effectively on Twitter to engage a range of different twitter users in wanting to engage in dialogue related to the channel, PML-N uses a limited amount of re-tweets. On Facebook both parties are engaged in trying to build community, attract likes and increase engagement with their platform, it can be argued that PTI are much more effective at doing this based on the substantial difference in numeric engagement. However, in relation to specific official posts there are limited differences between the amount of engagement you might be likely to see on either parties Facebook pages. For example, PML-N posted a Facebook item on the 31st December wishing members of its community a Happy New Year. This posting was the third most popular official Facebook posting for discussion by both parties over the period analysed, with individuals simply replying with similar messages or directed New Year messages to the party. In comparison PTI provided a message of remembrance for the poet Dr. Allama Muhammad Iqbal this attracted a lower number of messages in direct correspondence to it, a lower number of likes but a higher number of individuals willing to share this post with other community members.

6. Conclusion

The above paper has discussed the application of a novel opinion analysis approach to the analysis of official social media pages for two political parties in Pakistan in a period post a general election. Pakistan in 2013 presented an interesting country to analyse given the indications were for a different result prior to the national election in physical and social media outlets. A new political party PTI pre-election engaged extensively in promotion through social media targeting a substantial demographic that of the youth population in Pakistan. Post-election we see changes in the ways in which the political parties are engaging with social media and it is useful to understand the ways in which their platforms are developing.

The findings present in section 5 above provide a snapshot of three months of social media conversation within Pakistan political party pages. We find that change is occurring within the social media pages inhabited by PML-N and PTI as both parties mature into new governmental structures. PML-N after losing ground with particular socio-demographic groups in Pakistan, principally the youth of Pakistan are adapting policy and populating social media with key messages about youth development and support. PTI pages promoting protest, change, and concerns with the previous election process are analysed to have a particularly negative orientation. This negative orientation coupled with action driven by *Dharna* seems to be having a negative impact on discussion within social media pages. It remains to be seen whether such negativity can lead to transformative action in Pakistan.

This difference between party spaces in terms of the ways in which they 'feel' would be interesting to analyse across multiple national contexts. In the case of Pakistan and other developing countries where issues arise as a result of election processes or other circumstances, it would be of use to determine the impact this has on oppositional party contexts within social media. It would also be useful to compare this against more developed countries where issues with regards to transparency and perceived nepotism are less usual. Would we find that by their nature oppositional party social media pages are always built around negativity (responding to the opposition) or would we find a variation between national contexts? In addition as time passes in the Pakistan context will this focus transform and ultimately at time of election will strategies change in relation to positively putting forward policy for new directions for Pakistan's future.

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A Case Study of the Impact of Instructional Design on Blogging and Terms Networks in a Teacher-Training Course

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Abstract: Social media such as blogs have been used in university courses for assigning online discussions that promote critical thinking and that engage students in interactive learning. In this case study, blog text postings were used to extract features that might reflect better the effectiveness of the design of the assigned online discussion. Blog postings were taken from an online discussion assignment that had three parts: first, students were to write a lesson plan for online teaching and post this in their individual blogs for classmates to read ("content"); second, each student was to participate in an online discussion by doing a critique of two peer's content ("critique") and this critique was limited only to good/strong points, and third, each student was to provide and post suggestions for improvement of the peer's content ("suggestions"). "Critique" postings were operationally defined here as "controlled" blog entries and "suggestion" postings as "open-ended". For lexical analysis, all nouns in each sentence were extracted and nouns that appear concurrently were selected. Concurrent relationships were summarised as adjacency matrix or matrices, which also work as term networks that are similar to concept maps. The relationship can be mathematically represented in a matrix, intersection, union, and then the difference of term networks can be calculated. Partial results from the lexical analysis of blog data from 5 participants indicated that when comparing the intersections of terms between "critique" and "suggestion" blog texts, three intersecting terms emerged for "critiques" and only one term for "suggestions". The number of terms could indicate the degree of task appropriateness of online discussion design (controlled vs. open design) when using blogs in the course.

1. Introduction

Social media such as blogs, wikis, and discussion boards are being used increasingly in the design of university courses in order to integrate online discussions that promote critical thinking and that engage students in interactive learning (Leh et al. 2012, 2013). Blogs, in particular, are reported to have increased in number (Wang et al. 2004; Davi et al., 2007) and are being used in almost all disciplines, from medical sciences to business and education. Blogs have become a mainstream form of asynchronous communication over the Internet and not surprisingly, blogs are now being integrated in some popular learning management systems (Davi et al., 2007). The increased usage of blogs in higher education is indication of their acceptance as tools for self-expression, and the acknowledgement of their potential to serve as learning tools.

As learning tools, blogs are used to foster class discussion (CFT, 2014; Weller et al., 2005), where students publish individual work and information, and then invite responses and feedback to enrich their work, thus encouraging students to write more thoughtfully and critically. Blogs are also used to create learning communities and for promoting collaboration. Based on multiple learning effects, Wang et al. (2004) summarized the main uses of blogs in higher education as learning tools for knowledge construction and management, and for performance improvement. As tools for enhancing class discussions, blogs have been reported to be effective (Davi et al., 2007; Goldman et al., 2008).

However, the effectiveness of blogs in the classroom could very well depend on the instructional design of the online discussion activity that students are assigned to do and this implies the need to have an understanding of the nature of blogs. In terms of screen display and features, blogs are less hierarchical than discussion boards, and new material is displayed in reverse chronological order. Blog postings can include words, images, links, and are often themed on a single subject. Blogs have been described as easy to set up and manage. Postings or updates can be done frequently and rapidly. It is a simple and convenient tool (Tan et al., 2010) for unedited, personal thoughts and reflections. The fact that blogs are practically free can be considered as another attractive feature of this social media technology.

Blogs are open, public, and have the ability to provide room for reactions and responses from readers (CFT, 2014), thus, it is also a tool for fostering community. It includes a mechanism for knowledge sharing and

collaborative filtering (Educause, 2005). Through blogs, users can communicate and dialogue in a dynamic and interactive manner. Farmer et al. (2008) describes this "individual-communal" nature of blogs as oppositional but interrelated, thus making blogs to be transformational communication technologies (Farmer et al.2008, citing Papacharissi, 2006).

Because a blog is created and controlled by an individual, it is user–centered. It could give the individual not only a sense of ownership but also a sense of individual empowerment, and it could serve as a vehicle for expressing self-directedness (Wang et al., 2004). However, the literature also include recommendations that instructors should provide clear goals, structured assignments and guidelines in order to maximize the benefits of blogs and enhance their value in educational settings (Educause, 2005). Study results on the use of blogs by Tan et al. (2010) stated that by having clear guidelines to help scaffold learners efforts towards the learning objectives, a "focus on the learners' clinical reasoning and meta-cognitive skills were evident" (p. 12). This, however, could lead to tension between the blogger's independent thinking and the scaffolding guidelines or instructions from the teacher. This in turn will have implications on the instructional design of online discussion activities. The nature and advantages of blogs need to be considered when designing an online discussion activity, but the instructors should be careful not to let structure take away the voluntary nature of blogging (Brescia & Miller, 2006), and at the same time, be careful not to let independent thinking take away the learner from the expected learning outcome and subject matter.

Online discussions using blogs usually assign a concept (theme or topic) and then require students to create and share knowledge about the given concept with classmates. To graphically represent the concept being discussed, the concept mapping method (Novak et al. 2008) is often preferred, not only for face-to-face classroom discussions but also within online learning environments (Cheng et al., 2013). In studies that used concept mapping in online settings, appropriate evaluation guidelines and feedback for participants were identified by both participants and instructors as the key factors when presenting an illustration of what they learned and what promotes self-reflection (Rye and Katayama, 2003). However, the appropriate methodologies for the quantitative evaluation of concept mapping procedures in online discussions have not been established since there are no procedures from converting discussion content (postings) to the concept map. In addition, comparing maps is difficult because they are created freely by every online discussion participant.

Recently, lexical analysis called network analysis is being used to illustrate the relationships in discussion texts and the individual term networks (Rabbany et al. 2012). Network analysis technique could help indicate the discussion themes (or topics) that participants engage in, based on the text (words) used in their postings. The data can then be used for quantitative analysis after generating a visual graph, such as a concept map or a lexical visualized graph. It is therefore hypothesized for this case study that a lexical analysis of text from blog postings in an online discussion activity and the visual graphs generated from the data can be used to extract features that can relate to the effectiveness of the design of the assigned online discussion. Specifically, the purpose of this paper is to determine whether the proposed metrics can detect the difference in the lexical features of the visual graphs representing two types of online discussion tasks. The paper also aims to address the following questions:

- whether the online discussion can be illustrated using lexical graph visualisation techniques
- what features related to the effectiveness of the design of the online discussion using blogs can be extracted from the visual graphs
- how lexical analysis could help improve the design on online discussion activities

2. Method:

2.1 Online course and discussion using blogs

This case study was conducted in an Instructional Technology graduate course that is taught fully online every Winter quarter, and it integrates the use of blogs and discussion boards for online discussions. In this course, the students were to learn how to design and develop an online course, and it included a series of assignments which then led to a one big, final project.

For this study, the assignment that was selected was the 5th week's assignment. By that midpoint in the quarter, the students were already familiar with the course objectives, flow, and procedures. The particular assignment that was selected for this case study had three parts: first, students were to write a lesson plan for online teaching, and post this in their individual blogs for the rest of the class to read (this lesson plan will be referred to as "content" in this paper); second, each student was to participate in an online discussion by doing a critique of two peer's content ("critique"), and third, each student was to provide and post suggestions for improvement of the peer's content ("suggestions"). Students used their blogs for posting their content, critiques and suggestions. Although students could also post other comments and information in their blogs, only critique and suggestion postings were used for data analysis.

For the online discussion on critiques, students were required to address only the "good/strong" points of their peer's content. For suggestions, no requirements were given and students could freely address this and give suggestions for improvement on any or all parts of the content. As such, the critique part is operationally defined here as a "controlled" blog entry, while the suggestions part is operationally defined as an "open-ended" blog entry. Therefore, controlled critique postings will have certain characteristics that will be different from open-ended postings (i.e., suggestions), particularly in terms of student's self-directedness and sense of individual empowerment. Since the blog postings were different, the visual graphics, as well as the "term networks" generated are expected to be different. Those differences were determined using lexical analysis.

The number of participants who gave their consent to use their blog postings for this study is limited to 5 students (3 students in 2011 and 2 students in 2012, out of class enrolments of 8-12 students). Thus, caution should be exercised when interpreting the results of this case study.

In a related study done in this same graduate course, the students were surveyed after using discussion boards to participate in online discussions. Survey results have already been reported in another paper (Santiago et al., 2012; Leh et al., 2013). As part of the survey, students rated their online discussion experience. Then, their responses were used to improve the design of the online discussion assignment as part of an action research study. No analysis was done on the online discussion entries that were posted in the discussion board due to IRB limitations. Overall, survey results indicated that the instructional design of the online discussion assignment had positive impact on students' experience with online discussions (Santiago et al., 2012).

2.2 Lexical analysis and graphical mapping

To study the above hypothesis, lexical analysis and graphical mapping were carried out.

Each participant's blog texts were individually gathered as simple sentences. In those sentences, all nouns that appeared consequently were extracted since they were considered to refer to a concept that the blogger is describing by using nouns and the way these nouns connect or relate to each other. These consequential nouns were then summarized and analyzed.

In lexical analysis, all nouns are extracted using a lexical tagger tool (TreeTagger). For example, noun strings A-B and B-C were extracted from a string A-B-C. A pair of nouns appearing consequently in a sentence is defined as consequential noun. The tagger tool can determine the part of speech (noun, verb, article, etc.) of every word in a given sentence. Consequential nouns were extracted from sentences as a result of this lexical processing. For the analysis, nouns were grouped based on how frequent each noun was used in the texts.

The concurrent relationship of consequential nouns can be summarised in an adjacency matrix, which also works as term networks. Term networks are similar to concept maps where relationships are represented as linkages between nouns. An example of an adjacency matrix is shown in Figure 1. The row indicates the first noun and the column indicates subsequent nouns. This means that the pair indicates a directional sequence of appearance.

The relationship of nouns can be mathematically represented in three forms: (a) a matrix, (b) an intersection, (c) a union, and then the difference of term networks can be calculated using a visualisation tool such as "R+igraph" (igraph).

Also, the adjacency matrix can be easily converted into a directed graph as shown in Figure 2. The figure shows the directional relationship between noun terms as terms networks, and it is a kind of concept map which represents the blogger's tendency to use the same or related terms. As shown in Figure 2, noun terms as nodes are widely distributed or diffused, instead of centralized, when the network relationship is diverse. On the other hand, the nodes are compact and centralized when the noun terms are closely-related to each other. Also, the centrality of a node is a measure of its importance within the terms network as illustrated in Figure 2 (Rabbany et al. 2012).

$$
\begin{array}{l}
objective \\
beginning \\
goal \\
guidance \\
communication \\
track \\
plan \\
assessment \\
measure \\
performance \\
message \\
check \\
requirement \\
orientation \\
course \\
method \\
technology \\
student
\end{array}
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\begin{array}{cccccccccccccccccc}
0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
1 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
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0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0
\end{array}
\right)
$$

Figure 1. An example of adjacency matrix of nouns. (g3: subject3 critiques)

Figure 2. A sample directed graph from the adjacency matrix.(g3: subject3 critiques)

There are indices of centralisation in a directed graph, since the graph represents how emphasis is given to a main concept. The major indices are density, closeness, and betweenness (Hanneman, Riddle, 2005). These are described further as follows:

▪ Density: The value increases with complexity of graph since many edges are linked between nodes. This index is an overall measure of the network. The value increases as complexity of graph since the number of edges increase.

- Closeness: The value decreases with centralisation. This metric indicates a distance from a specific node to other nodes. The distances will be short when the network is illustrated compactly. As the metric measured for each node, the average distance is used in this paper.

- Betweenness: The value increases with centralisation. The possibility of the node which is the shortest distance with another node. The possibility grows when the network is centralized. As the metric measured for each node, the average possibility is also used in this paper.

3. Results

3.1 Text features of blog postings

Blog texts were analysed using the following methodology: summarising texts individually, morphological analysis, and noun terms extractions. The number of words, the number of nouns, and frequency of consequential nouns are summarised in Table 1 as "good/strength critique" postings (g1 to g5), and "suggestion" postings (t1 to t5) for each of the five participants. It will be noted in Table 1 that the numbers of words are distributed across the two types of postings (critique vs. suggestion) and the five participant's effort or preference for original choice of words may differ individually between two postings. For the extraction of consequential nouns, adjacency matrices were created for each blog posting. Using the matrix information, the measures were calculated and are summarised in Table 1. The average means for closeness and betweenness were calculated across all nodes. Most of the blog texts for "critique" postings were found to be more complex than those for "suggestions" postings. Also, the degrees of values for individual posting attributions show similar tendencies.

Table 1. Term frequency and features of posting texts.

	words	nouns	n-n	density	closeness	betweenness
g1	229	46	30	0.025	0.0009	3.9
g2	284	56	41	0.028	0.0010	59.5
g3	129	36	28	0.040	0.0026	44.2
g4	382	95	80	0.015	0.0003	136.4
g5	279	63	51	0.052	0.0036	45.0
s1	396	72	46	0.019	0.0005	4.0
s2	290	68	56	0.022	0.0006	32.2
s3	139	30	21	0.040	0.0022	3.5
s4	113	22	16	0.052	0.0003	5.7
s5	243	56	43	0.043	0.0028	74.0

Figure 3. Union of all graphs for " critique" blog posting (density=0.01, mean closeness=0.0001, mean betweenness=275)

Figure 4. Union of all graphs for "suggestion" blog postings (density=0.009, mean closeness=0.00009, mean betweenness=300)

Figure 5. Intersections of all graphs for "good/strength critiques"

3.2 Graph Results

Since the graph data can be manipulated to calculate union sets and intersection sets, those graph calculations were conducted in two categories: "critiques" and "suggestions". The union sets are displayed respectively in Figures 3 and 4. These figures show the summation or union of the nouns in graph format. With regards to values of indices, the features of the two graphs are comparable, although the union sets for "suggestions" seem to appear as more sparse.

The intersections of terms were compared across the five participants based on their "critique" blog texts, and also on their "suggestion" blog texts. Figure 5 shows the result of the intersection of terms in "critiques", which includes three (3) words: student, content, course. On the other hand, there was only one term (course) in the intersection of all graphs for "suggestion" blog texts.

4. Discussion

Online discussions using social media such as blogs can enhance the participants' learning. However, evaluating and getting feedback on the effectiveness of blogging is not easy. A number of studies have recommended that the online discussion should be structured, and that rubrics with specific criteria should be designed and given to participants in advance for the effective use of blogs as online discussion tools.

In this study, a lexical analysis method was used to directly evaluate participant's postings. This method of analysis posits that blog postings can be converted to a concept map which will then represent the term networks that result from those blog postings. Also, the graphical component of this analysis method can illustrate important features of the postings in terms of density, closeness and betweenness of words in the concept map or graph. Using these features, analysis can be done on the initial course design. The number of terms could indicate the degree of the task appropriateness of the online discussion design, i.e., controlled or open-ended tasks, when using blogs in the course. Results of the lexical analysis of blog texts done in this case

study indicated that postings for controlled tasks are more complex than the postings for open-ended tasks. Also, there are some differences in centralisation of term-mapping between these two types of online discussion tasks. Although it is impossible to statistically measure the significant differences between the concept maps that were generated based on the two online discussion tasks in this course, those metrics can demonstrate the trends among the features that emerged from the blog postings.

This analysis was based on a very small-scale data, so the results are very limited. However, with the method used for analysis, it may be possible to find evidences of how instructional design could help with the appropriate use of blogs for online discussions activities or assignments.

Further analysis using a large-scale data and relating the results to students' thinking styles will be the subject of our next study.

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Uncovering the Value of Formative Assessment in the Wiki Projects of Early Childhood Student Teachers

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Abstract: Wiki-based projects tend to be difficult to assess, especially for students who are not highly ICT competent. This paper reports on a study of 38 pre-service early childhood teachers who applied the skills and knowledge they had learnt in classes to create digital learning materials using wikis designed for young children. The wiki project was a group assignment, and the author investigated whether formative assessment could support learning. Prior to formal submission, each student had to provide constructive comments to four other groups in a discussion forum in the last class by referring an assessment rubric created by the author. To assess the value of the formative assessment, data were collected via a discussion forum and a questionnaire. Findings from the discussion forum indicated that the student teachers contributed ideas to their peers actively and that their comments were aligned with the criteria of the assessment rubric. The feedback was primarily related to project design, as well as content, organization, and credibility. The questionnaire findings indicated that comments from the teacher and providing feedback to peers facilitated the student teachers' learning. The findings from multiple sources suggested that formative assessment is a useful approach to engage learners and to improve the quality of wiki projects.

Keywords: assessment rubric; early childhood; formative assessment; peer assessment; student teachers; wiki projects

1. Introduction

"Web 2.0" can be broadly defined as a second-generation or more personalized communication form of the World Wide Web that emphasizes active participation, connectivity, collaboration, and the sharing of knowledge and ideas among users (Gray et al. 2010). Participating in Web 2.0 environments such as Facebook, Twitter, and YouTube is a part of many people's daily activities. While these Web 2.0 environments are very useful for social networking, they are not very appropriate for integration into teaching and learning because of their advertisements and limited collaborative features. Wikis, on the other hand, have no advertisements, and the owner of a wiki site can grant ownership, collaborative rights, and viewing rights to other people so that team members can edit and view pages anytime and anywhere (Leuf and Cunningham 2001, Lai and Ng 2011). Moreover, creating wiki pages does not require any application software because sharing websites and learning platforms provide them for free. Users can create a variety of digital resources and embed them in their wiki pages easily without learning HTML or other coding languages (Heafner and Friedman 2008). The revision history features of wikis are also invaluable for users and educators to trace the content and time of revisions (Trentin 2009, Ng and Lai 2012).

Assessment is one of the basic components of a learning curriculum. It should be embedded in the learning process to provide formative feedback and support learning (Berry 2008, Black 2005, Morris 1995). There are three approaches to assessment: (1) assessment of learning (AoL), which involves ranking students' abilities to inform teachers how much students have learnt and whether some students need extra help; (2) assessment for learning (AfL), which involves using assessment to support learning and embedding assessment in the learning process through formative feedback and explicit guidelines; and (3) assessment as learning (AaL), which involves developing students' metacognitive skills so that they can adjust and advance their own learning (Earl 2003).

The guiding principles of AfL suggest various formative assessment methods as well as multiple assessors including the teacher, other teachers, the students themselves, and their peers (Biggs 1996, Berry 2008). This contrasts with the traditional approach of having the teacher assess the students at the end of the semester. AfL, particularly self-assessment and peer assessment, has attracted a lot of attention in higher education (Falchikov and Boud 1989, Falchikov and Goldfinch 2000). Students are more actively involved in their own learning activities when they have to assess their peers, as opposed to merely being assessed by the teacher. Researchers have also suggested that rating instruments or checklists be provided to students when they are performing peer assessment (Boud 1999, Sluijsmans et al. 2002). As well as giving marks, it is beneficial if students can also provide comments (Holroyd 2000). Indeed, the provision of feedback at an appropriate point in the learning process is also essential so that students can revise their work promptly (Brown and Knight

1994). Information and communication technologies (ICT) can provide an ideal environment for timely feedback and dialogue engagement (Ng and Lai 2012).

Indeed, many studies have reported on the successful use of wikis in education. For example, wikis have been found to foster collaborative learning in written English (Mak and Coniam 2008, Wang 2010), to help pre-service teachers produce high-quality science materials (Nicholas and Ng 2009), and to develop pre-service teachers' generic skills (Lai and Ng 2011). However, users of wikis have also encountered problems. For example, some students become frustrated by the complex structure of wikis and the frequency of vandalism and plagiarism (Su and Beaumont 2010). There are also concerns among students about the openness of wikis, the high level of participation required (Wheeler et al. 2008), and the difficulty of assessing wiki projects (Ng and Lai 2012). However, when students are given assessment rubrics prior to an assessment, they can be guided to perform at their desired level (Huba and Freed 2000, Palloff and Pratt 2003).

Given the mixed results of previous studies on the ability of wikis to promote learning, this study investigates whether AfL can improve the quality of wiki-based projects authored by early childhood pre-service teachers. Wiki-based projects tend to be difficult to assess, especially for students who are not highly ICT competent (Su and Beaumont 2010). The following section discusses the research question, research setting, and findings. In the final section, conclusions are drawn and future research directions are suggested.

2. The Research Questions

This study seeks to answer the following four broad research questions:
1. *Did students actively engage in peer assessment?*
2. *Were comments from peers helpful?*
3. *Which formative assessment strategies were more useful for authoring wiki projects?*
4. *Which formative assessment strategies were less useful for authoring wiki projects?*

This study addresses these research questions using comments posted on a discussion forum (Questions 1 and 2) and results from a questionnaire (Questions 3 and 4). The data are triangulated to answer the research questions. Denzin and Lincoln (1994) argued that triangulation is a superior method because it does not merely involve methods and resources (e.g., informants), but also investigators and theories.

3. Method

The study was conducted during the Autumn 2012 Semester at a higher-education institution in Hong Kong. The students were taking a course in Information Technology in Education with the author (a teacher) during the first semester of their study programme. This course was a two-credit course, which meant that the students attended a two-hour lecture and/or a hands-on practical session every week. Accordingly to the course outline, the course was designed to "provide pre-service teachers with foundation knowledge on IT tools, multimedia and Internet technologies; and critical understanding of the application of information and communication technology to the solution of instructional problems from the perspective of related learning theories in the pre-primary school settings".

3.1 The Participants

The participants were student teachers enrolled in pre-service early childhood education programmes. They were all training to become kindergarten teachers (K1-K3). There were 38 students who had just graduated from secondary school, and none of them had ever used ICT as a medium for formative assessment. Groups of three to five students were formed, with 11 groups in total.

3.2 Setting

The students learnt about information technology and concepts from information technology for early children education, as well as some practical software skills, such as PhotoImpact, Photostory, Windows Movie Maker, and techniques for creating wiki pages using Google Sites. The course lasted 13 weeks, and there were two major assessments: (1) a group wiki project, in which students designed a resource to teach any topic related to early childhood education; and (2) an individual essay on any critical issue related to ICT in early childhood education. Each assignment counted for 50% of their total grade.

3.3 Data Collection

Data were collected from different sources so that data from one source could enhance, elaborate, or complement the data from the other sources (Greene and Caracelli 1997). The students had to apply the skills and knowledge they had learnt to create wiki pages integrating content, pedagogy, and technology (Hughes 2005, Koehler et al. 2007). Based on previous literature (Piedra et al. 2010, Barton and Heiman 2012) and web resources, the author developed an assessment rubric that consisted of four criteria: content, design, organization, and credibility.

Following the suggestions of Grant (2002), the students were required to tackle the following tasks:

(1) An introduction - The educator conducted a hands-on workshop showing how to use the editing functions of the wiki, provided free of charge by Google Sites. She also provided a sample for the wiki projects.

(2) A task - The students had to apply the knowledge and skills they had learnt in class to create learning materials on a topic of their choice to help kindergarten pupils learn.

(3) A process - The students created learning materials as a team on a selected topic via the wiki site.

(4) Resources - Video clips showing how to use some editing functions were posted to refresh students' memory of how to edit wiki projects.

(5) Scaffolding - The wiki project guidelines, an assessment rubric, and timelines were posted onto the wiki for easy reference. Students were asked to post the project title and project objectives prior to creating the wiki pages on their own.

(6) Collaborations - Group members collaborated when creating their project materials. After the students had completed the draft wiki projects, each student had to provide constructive comments to four other groups in a discussion forum in the last class by referring to the assessment rubric. They were also free to add extra criteria. They posted their comments on the MOODLE discussion forum, the standard learning platform provided by the institute, rather than on the wiki site because some of them had expressed their opinions while doing their wiki projects, and some were just testing out the comment functions of the wiki pages.

(7) Opportunities for reflection – Each group of students were asked to discuss the feedback from their peers and plan how to improve their projects based on the feedback. They were also asked to fill out the questionnaire at the end of the formative assessment to reflect on the process of formative assessment and rate the different approaches. The questionnaire was adapted from the 10 guiding principles of AfL (Black et al. 2004, Berry 2008). Modifications were made to three questions, namely Q4, Q7, and Q10. Two items (Q11 and Q12) were added to investigate the value of the wiki project and feedback from the teacher (Table 1). All of the 10 principles were slightly reworded and were placed on a 7-point Likert-type scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). The completion of the questionnaire was voluntary.

4. Results and Discussion

4.1 Findings from the discussion forum

With regard to Research Question 1 (*Did students actively engage in peer assessment?),* it was found that the students did very actively engage in peer assessment (De Wever et al. 2011a). There were a total of 262 comments posted: 129 were positive comments, 118 suggested there was room for improvement, and 15 consisted of feedback from the evaluated group to the reviewers. On average, there were 3.4 positive comments and 3.1 "room for improvement" comments made per student. There was an average of 1.36 feedback comments made per group to their reviewers.

The assessment rubric was found to be able to guide students in their assessments because all their comments fell under the assessment criteria (Huba and Freed 2000, Palloff and Pratt 2007, Palloff and Pratt 2003). The findings showed that most of the positive and negative comments were related to design issues; many others were related to content matters. None of the students came up with any other assessment criteria. Specifically, 98 positive comments were related to design, 46 to content, 20 to organization, and none to credibility. In addition, 79 "room for improvement" comments were related to design, 44 to content, 5 to organization, and none again to credibility.

It was observed that only 5 out of 11 groups responded to their peer assessments, despite the fact that the author suggested that they did so. This low figure was perhaps due to time limitations in class since the students were given only 15 minutes for discussion among team members. Of these five groups, four gave responses to the overall content of the peer assessments, while one gave responses to each comment. One group responded before revising the wiki, three groups responded after revision, and one group responded both before and after revision. From their replies, it was clear that they had taken their peers' comments seriously. For example, Group 11's project was about how to "love our planet". Reviewers' suggestions included enlarging the fonts, enriching the content, and adding games and activities to make the wiki project more interesting. Group 11 responded by saying they had revised the wiki accordingly. Figure 1 displays the added sub-page, which contained an interactive game that involved asking children to pick an endangered animal. Figure 2 displays two sub-pages that contained feedback on users' choices in the interactive game. The screen shots included both words and icons to encourage users. This example substantiates the questionnaire responses that *peers' comments were helpful (Research Question 2).*

Figure 1: An added interactive game that involves asking children to pick an endangered animal.
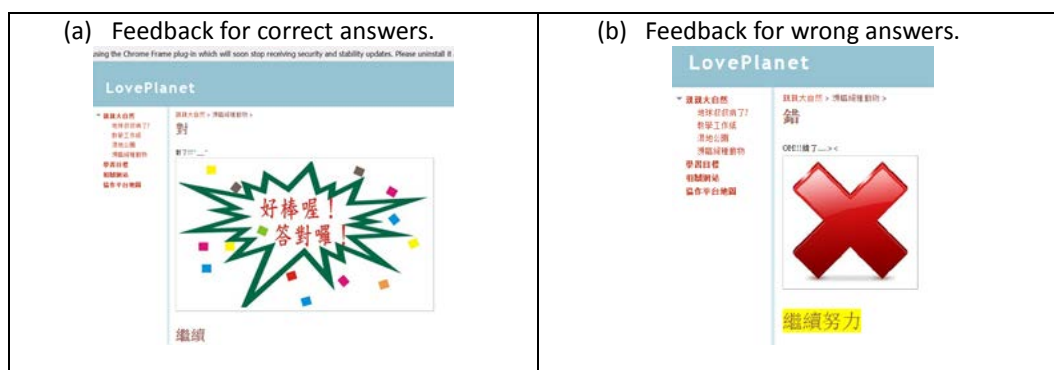
Figure 2: Feedback for choosing correct and incorrect answers.

4.2 Findings From the Questionnaire

A total of 33 questionnaires were received, for a high return rate of 87%. The mean responses ranged from 4.67 to 5.39, suggesting that the students had positive attitudes towards AfL. All of the responses were above 3.5, which was the mean for the 7-point Likert-type scale (Table 1). The standard deviations ranged from 0.78 to 1.20 indicating that the students had similar viewpoints for all questions asked.

With regard to Research Question 3 (Which formative assessment strategies were more useful for authoring wiki projects?), they rated the educator's feedback as the most useful assessment strategy (Question 11, mean=5.39, S.D.=0.78; Su and Beaumont November 2010, Biasutti and EL-Deghaidy 2012). The second most useful was providing feedback to their peers (Question 9; mean=5.3, S.D.=0.81; Brown and Knight, 1994) whilst the third most useful strategy was "I feel authoring a wiki project enables me to integrate technology with content, pedagogy, and knowledge" (Question 12; mean=5.3, S.D.=1.10; Hughes 2005, Koehler et al. 2007).

Regarding Research Question 4 *(Which formative assessment strategies were less useful for authoring wiki projects?)*, the students did not like their projects to be assessed throughout the learning process (Question 5, mean=4.67, S.D.=0.92; tied for the lowest-rated question), nor did they feel that multidimensional assessment

methods were used during the project (Question 2, mean=4.67, S.D.=1.11; tied for the lowest-rated question). Although the responses to these two questions had the same mean, the standard deviation for the responses to Question 5 was much lower than that for the responses to Question 2, which indicated that the students in general did not like their projects to be assessed throughout the learning process, but on the matter of multidimensional assessment methods, their views were more varied. Interestingly, they did not think that the assessment methods were conductive to learning (Question 3, mean=4.85, S.D.=0.94), even though they felt providing feedback to peers could facilitate learning.

Rank	Question	Mean	SD
1	Q.11) I feel the teacher giving feedback prior to final submission is a good approach.	5.39	0.78
2	Q.9) I feel providing feedback to my peers can facilitate my own learning.	5.3	0.81
3	Q.12) I feel authoring a wiki project enables me to integrate technology with content, pedagogy, and knowledge.	5.3	1.10
4	Q.8) I feel marking criteria accessible to me can guide me in the group project.	5.27	0.80
5	Q.4) I feel that ICT provides a good platform to facilitate assessment.	5.15	1.18
6	Q.1) I feel that my group project has aligned assessment to teaching and learning.	5.03	1.02
7	Q.7) I feel assessing my peers' work can uncover their learning.	5	1.06
8	Q.10) I feel analysing peers' comments can help me refine our group project.	5	1.20
9	Q.6) I feel allowing students (my peers and me) to take part in the assessment process is useful.	4.91	1.10
10	Q.3) I think the assessment methods are conductive to learning.	4.85	0.94
11	Q.2) I feel that multidimensional assessment methods were used during the project.	4.67	1.11
12	Q.5) I like having my project assessed throughout the learning processes.	4.67	0.92

Table 1: Means and standard deviations for the questionnaire items

5. Conclusions and Directions for Future Research

This article investigated whether formative assessment can support learning. Pre-service student teachers who were intending to teach in kindergartens in Hong Kong created digital learning materials for young children in a

wiki environment and peer-assessed their projects prior to formal submission. The findings were collected from a discussion forum and a questionnaire to make the findings more reliable and complementary. The questionnaire findings revealed that the students believed AfL is an invaluable learning experience because the teacher provides feedback prior to formal assessment and because providing feedback to peers can facilitate learning. This finding is unsurprising since the teacher will grade them (Huba and Freed 2000, Palloff and Pratt 2003). On the other hand, they did not like having their projects assessed throughout the learning process, and they did not feel that multidimensional assessment methods were used. The postings on the discussion forum substantiated that students were actively engaged in peer assessment both as an assessor, since each student gave more than three positive comments and thee "room for improvement" comments, and as a learner, since they revised their wiki projects according to their peers' feedback.

It is necessary to integrate assessment with pedagogy, and so it was encouraging to learn that students felt authoring a wiki project enabled them to integrate technology with content, pedagogy, and knowledge. However, we have to be mindful that there are some limitations to this study. First, the responses of the students were based on their subjective perceptions expressed through the questionnaire. Second, the findings may not be generalizable due to the limited sample size.

Future studies could compare the wiki projects before and after the formative assessment, conduct a focus group to uncover the reasons behind students' opinions, and examine the longitudinal effect of peer assessment because peer assessment seems to become more reliable and helpful over time (De Wever et al. 2011b, Ng and Lai 2012). In conclusion, the findings substantiate the notion that AfL is a helpful and preferable learning strategy for early childhood pre-service teachers (Gray et al. 2010, Lai and Ng 2011, Ng and Lai 2012).

Acknowledgements

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Getting New Professional Contacts in Foreign Markets Through Social Networking Sites

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Abstract: The need for cross-border collaboration and information sharing has never been greater, given the trend towards remote control and the rise in the number of companies spread across different territories. Web 2.0 tools, particularly social networking sites (SNSs), make it possible to bring together thoughts and ideas from professional workers scattered across a country, or even around the world. Being able to find information, people and expertise helps business to grow and remain competitive. Professional networking using the web 2.0 is providing entry opportunities into international markets, allowing professional workers to interact with both workers and companies in markets worldwide. There are few studies focused on how workers use web 2.0 tools and most of those that do exist consider companies. For that reason our research seeks to test the importance given by workers of the Basque Country region in Spain, to the use of social networks, particularly SNSs, to find new professionals around the world and help the workers to "network" in the companies where they work or in their own businesses.A field study therefore conducted involving a web based survey among professional workers of the Basque Country. A descriptive analysis was then applied to their responses. The main result are, on the one hand, that workers belonging to the quaternary industrial sector give greater importance to the use of SNSs to find professional contacts in unexplored business markets that given by workers in other sectors. On the other hand, professionals working for export companies also give great importance to using SNSs to find new business contacts around the world. There is a wide range of opinions among the industrial sectors regarding the statement that "the contacts belonging to my online community on the social networking sites have been useful in getting to know other companies and professional workers with similar business purposes in foreign countries"

Keywords: business networking, social networking sites (SNSs), Web 2.0 tools, international professional contacts, unexplored business markets, export companies, knowledge sector.

1. Introduction

In the midst of Web 2.0, we find SNSs, which include professional networking sites (SNSs for business purposes). One key reason behind the growth experienced by business networking sites recent years is the ability of Internet to connect people globally and cost effectively. Individuals and businesses need to explore all possible avenues of professional and corporate growth (Lloyd, 2009). On the one hand the environment in which small and medium enterprises (SME) are set up, move and develop has radically changed in the last decade (Levitt, 1983). On the other hand the creation of business networks a decade ago started to became increasingly important (Holmlund and kock 1998) as a tool that facilitated internationalization process (Coviello and McAuley 1999).

The paper is structured as follows: the second section justifies the key role of business and social networks in international trade based on network approach internationalization. In the third section, a review is performed of the key role of social networking sites, particularly the professional networking sites. This is followed, in section four, by the research design, the sample and the variables used. The methodology used is subsequently set out. The results obtained are set out in section six and the paper ends with the conclusions.

2. Business and social networks in International Trade

As a consequence of those different conditions of the SME environment, many enterprises considered export as an easier option than continuing operating in the intensely competitive domestic market (Chetty and Campbell-hunt, 2004). As regards SMEs, we can state that they were forced to begin or accelerate their internationalization processes and that the main driver pushing them beyond country boundaries was the need to overcome the aggressive local competitiveness in search of new markets for their products, new opportunities and enterprise profitability growth in an economic environment that had been dramatically open to the world (Cedrola, 2005). For many SMEs, establishing and/or reinforcing relationships with local

counterparts is a fundamental key for creating an international network: relationships are developed as bridges into foreign markets (Meyer and Skak, 2002).

Numerous types of SME internationalization processes have been identified (Freeman, 2002) and review of the literature seems to propose nine schools of thought (Leonidou and katsikeas, 1996; Laine and Kock, 2000). One of these groups includes the network approach, which focuses on the relationships between companies, involved in production, distribution and use of goods and services within an industrial system. According to this view, enterprises internationalize by establishing and cultivating relationships with partners in foreign networks. Many authors agree with the idea that the creation of business networks is becoming increasingly important (Holmlund and Kock 1998) and facilitating internationalization process (Coviello and McAuley 1999). Networks can assist SMEs regarding scarcity of resources and enable early and fast internationalization (Coviello and Munro, 1997; Oviatt, 1994). Firms seldom survive and prosper solely through their individual efforts. Each firm's performance depends upon the activities and performance of others and hence upon the nature and quality of the direct and indirect relationships a firm develops with its counterparts (Wilkinson and Young, 2002).

A network is a set of items, which we will call vertices or, at times, nodes, that are interconected by edges (Newman, 2003). If a social network is a set of people or groups of people with a pattern of contacts or interactions between them, we can conclude a business or professional network is a group of people with business interactions between them.

3. Social Networking Sites

In the decade of information and communication technology (ICT), Internet social networking (the phenomenon of social networking online) played a vital role in transforming business and communications through the use of computers. In 2000, many social networking sites (SNSs) emerged to ease interaction with people sharing common interests. Boyd and Ellison (2007) define SNSs as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site".

We therefore argue that digital SNSs and other types of social software (Web 2.0),create a unique opportunity to establish new business contacts with people from unexplored markets to gain new customers or other business partners. Harris & Rae (2009) predicted that internet social networks would play a key role in the future of marketing; externally they can replace customer annoyance with engagement, and internally they help to transform the traditional focus on control with an open and collaborative approach that is more conducive to success in the modern business environment.

The SNSs include professional networking sites, focused mainly on business purpose interaction. A professional business network is used for the business to business marketplace. This type of professional service enables business professionals to network and collaborate by title, industry and business interests so that they can discuss common themes, stay informed and share knowledge. By creating informative and interactive meeting places, professional networks attract, aggregate and assemble large business-focused audiences. These networks also improve the ability for people to advance professionally and are often used to identify career opportunities. Business professionals can share experiences with others who have a need to learn from similar experiences (Lloyd, 2009). The core of these networks online (SNSs), consists of profiles of its users, which are combinations of personal data, lists of interests, and connections with different levels of privacy in terms of information revealed, depending on the type of network. By creating and disseminating their profile, participants establish connections with other network participants, share contents of different nature, and the network will be getting consolidated (Mislove *et al.,* 2007).

In a research study conducted through an online survey among the group "Business & Jobs Portugal" of the social network LinkedIn (Cruz *et al.*, 2012), was conclude that mentioned business networking site presents itself as a facilitator for the expansion of new professional opportunities and that although Facebook and Twitter are known as networking tools with great potential, LinkedIn is the network that best suits the needs of those who seek professional contacts and promotion of business, which corroborates the findings of other studies (Fretzin, 2009; Donath, 2008).

In another study commissioned by Google (MillwardBrown, 2012), the use and impact of social tools by 2,700 executives in seven countries in Europe was assessed. The objective was to review current relevance and perceived importance of social tools in business. One of the findings regarding to business growth was that

76% of senior managers believed businesses that embrace social tools would grow faster than those who ignored the technology, meanwhile 53% believed that businesses will not survive unless they embrace social media.

We specially focus on the companies belonging to the quaternary industrial sector, the sector of the knowledge. Quaternary industries arise from breakthroughs in science and the outcome is social transformation. Novel solutions to human problems are developed, and choice in the marketplace expands. With new markets, new business practices come into being and the dynamics of human relationships change as the new technology is taken into households, (Anderson D.G., 2002).

4. Method

Data was collected from a sample of 25,000 professional workers (in non-manual but office-based roles) in companies of the Basque country, in the north-east in Spain. These professionals mostly work for small and medium enterprises (SME). The database belongs to the Basque government institution in charge of economic and competitive development, whose main goal is to drive change toward an innovative culture by fostering the implementation and use of ICTs in companies. The targeted companies were from various industrial sectors (manufacturing, services and knowledge) and varied in terms of employee numbers from 1 to 500. 320 questionnaires were returned with 283 being fully completed. The questionnaire was created and published using *Encuestafacil* (http://www.encuestafacil.com) and was made sent out to be answered between 6 May and 13 May. The results were processed using a statistical software, Statistical Package for the Social Sciences (SPSS®) version 19.

They were asked about some of the existing SNSs and other Web 2.0 tools they were using for business as these ones; Linkedin, Xing, Viadeo, Twitter, Facebook, Google+, Blog and corporate Website. Then, they were asked about some points related to the use of these tools.

The sample was distributed according to industrial sector and number of workers in the companies (see Figure 1 and Figure 2).

Industrial sector	Companies
Primary	1.1 %
Secondary	9.2 %
Tertiary	65.7 %
Quaternary	24.0 %

Figure 1: industrial sector to which the workers belong

Number of workers	Companies
>12	44.5 %
12-49	17.7 %
50-250	14.1 %
>250	23.7 %

Figure 2: distribution of the companies by size, measured with number of workers

5. Analysis and findings of results

We have analyzed the relation of four variables; (a) first point "the SNSs have helped me to get in touch with foreign professionals", (b) second point "the contacts of my community in the SNSs have helped me to get in touch with companies/professionals from foreign markets", (c) the fact of being an exporter company, (d) the industrial sector which the workers belong.

5.1 Export Companies

30% of the companies in our sample do export.

Relation between both opinions (a), (b) and the fact of being an export company (c)

The fact that the company exports its products to a foreign market influences both the first opinion (a) and second opinion (b) in the average assessment as confirmed with Mann-Whitney U test (see Figure 3 and Figure 4)

	(a) The SNSs have helped me to get in touch with foreign professionals	Grouping variable: (c) Does the company export its products to any foreign market?
Mann-Whitney U Z Asymp. Sig. (2-tailed)	5,013.000 -5.003 .000	

Figure 3: statistical significance between (a) and (c) variables

	(b) The contacts of my community in the SNSs have helped me to get in touch with companies/professionals from foreign markets	Grouping variable: (c) Does the company export its products to any foreign market?
Mann-Whitney U Z Asymp. Sig. (2-tailed)	5,686.500 -3.697 .000	

Figure 4: statistical significance between (b) and (c) variables

Both opinions show a positive correlation with a level of significance of 0.01. If the respondents rated one highly, their assessment of the other was also high.

Figure 5 and Figure 6 show the average assessment of both points are higher in export companies (2.35 and 3.54) , and rated lower in non export companies (1.7 and 3.03). It could be argued that people working for export companies are more likely to endeavor to get in touch with people, not only from their current export markets, but also from potential markets to which they could export if a business opportunity appeared. The low assessment of these points by people from export companies could be due to their position not being related to sales or public relations, where meeting people and building a business network becomes crucial, and therefore would not be appreciating the use of SNSs for these purposes.

Average assessment Min=2 Max=4	(c) Export Company			
	Total	Yes	No	Don't know
(a) the SNSs have helped me to get in touch with foreign professionals	1.93	2.35	1.7	2.27

Figure 5: average assessment the workers give to first opinion (a)

Average assessment Min=2 Max=5	(c) Export Company			
	Total	Yes	No	Don't know
(b) the contacts of my community in the SNSs have helped me to get in touch with companies/professionals from foreign markets.	3.19	3.54	3.03	3.27

Figure 6: average assessment the workers give to second opinion (b)

5.2 Companies from the quaternary industrial sector

The relationship between both points; (a) and (b) and the industrial sector professionals work at (d) is also analyzed.

The distribution of Companies from the sample by industrial sector, see Figure 7.

Industrial sector	Companies	Export company
Primary	1.1 %	33.1%
Secondary	9.2 %	42.2%
Tertiary	65.7 %	21.5%
Quaternary	24.0 %	47.1%.

Figure 7: distribution of companies by industrial sector

The industrial sector where the worker belongs to has influence in the average assessment on both first point (a) and second point (b) as confirmed with a Kruskal-Wallis Test (see Figure 8 and Figure 9)

	(a) the SNSs have helped me to get in touch with foreign professionals
Chi-Square	14.693
gl	3
Asymp. Sig.	.002
Grouping variable: (d) Industrial sector	

Figure 8: statistical significance between (a) and (d) variables

	(b) The contacts of my community in the SNSs have helped me to get in touch with companies/professionals from foreign markets
Chi-Square	9,631
gl	3
Asymp. Sig.	.022
Grouping variable: (d) Industrial sector	

Figure 9:statistical significance between (b) and (d) variables

Figure 10 and Figure 11 show the average assessment the workers give to first and second points respectively, depending on whether or not they are importers.

Figure 10: average assessment of first point "the SNSs have helped me to get in touch with foreign professionals".

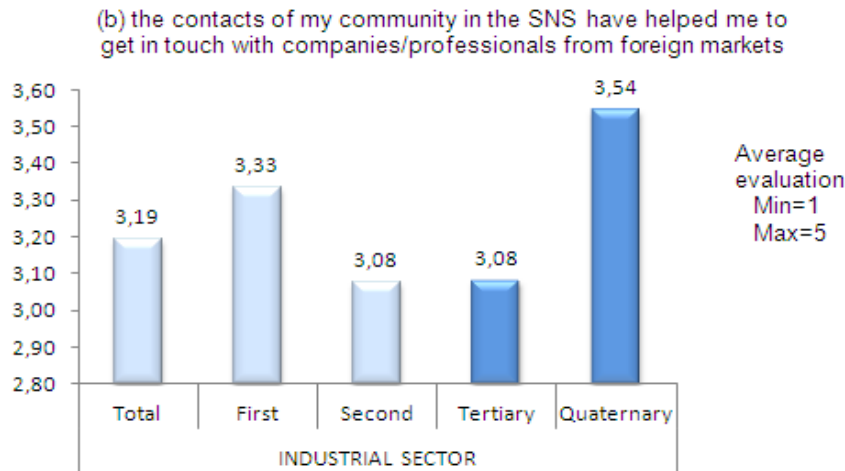**Figure 11**: average assessment of second point "the contacts of my community in the SNSs have helped me to get in touch with companies/professionals from foreign markets".

Figure 10 and Figure 11 show the higher assessment given to both points by quaternary sector workers (2.34 and 3.54) compared to tertiary sector workers (1.77 and 3.54). This result could be explained by the fact that only 21.5% from the tertiary sector do export, while half of the quaternary do, and knowing that being an export company, influences both points. The above results show that further reason could be the actual tasks carried out by the workers. Yet, when the companies from two sectors are analyzed in depth, the roles of the companies in the quaternary sector can be seen to be related to the ICTs, research and education, whereas the companies in the tertiary sector are not. We believe that the workers in different departments carrying out different tasks in the quaternary sector, are involved in sharing information and ideas, not only inside the company but also with people from other companies, where territorial barriers are broken in the search for new business opportunities.

Industrial activities in the Basque Country were traditionally centered on steel and shipbuilding, mainly due to the rich iron resources found during the 19th century around Bilbao. These activities decayed during the economic crisis of the 1970s and 1980s, giving ground for the development of the services sector and new technologies. Even so, the industrial sector has still have a high importance in Basque economy, and this is a reason Basque government has an established network of support services for the industrial sectors. The drivers of this network are the various Basque Country cluster associations, providing key support for over 1,000 member companies in terms of promotion, incentives and intermediary activities, all of which goes towards establishing an efficient system of industrial development based on inter-company collaboration and cooperation, a trademark of the Basque industrial fabric. Over the last eight years, a series of innovative initiatives in the field of learning and collaboration between organizations have been developed, involving around 400 companies, consultancies, business schools, universities, Public Administration and other entities, and around 7,000 people in 29 work forums and information exchange networking events (Euskalit, 2013).

Regarding the results of our study, companies from the knowledge sector can be said to be using the SNSs analyzed in the survey, along with the networks provided by the government as complementary tools, to broaden the net and to thus be able to span a wider area and to benefit from contacting professionals of interest.

6. Conclusions

Professionals from the quaternary sector are successfully using the Social Networking Sites (SNSs) to get in touch with people with business interests in foreign markets. In the knowledge based sector, the staff carrying out different tasks, are involved in sharing information and ideas, not only inside the company but also with people from other companies all around the world, where territorial barriers are broken in the search for new business opportunities. Sharing information with other firms makes it possible to get to know prospective clients and to take advantage of the business opportunities the international market offers. Everybody becomes the public relation officer of the firm in knowledge based companies. The SNSs facilitate the task of getting in touch with people we do not know, we never have seen and we never have heard of, and in the Basque Country not only companies from the quaternary sector but also export companies are embracing the

opportunity the SNSs, and particularly the professional networks provide. Professionals belonging to export companies in all industrial sectors (exporting products, services and knowledge) rate SNSs highly regarding help provided by the sites to get in touch with other workers and firms with business interests in foreign markets. These people working for export companies are using SNSs to contact people not only from the markets they export to, but also potential markets where they could export if a business opportunity appeared. Most workers now appreciate the need to embrace Web 2.0 tools to communicate, market and sell.

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Issues of Using Information Communication Technologies in Higher Education

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Abstract: Social media sites such as Facebook and Twitter are examples of information communication technologies (ICTs) that have been widely adopted by students, and could potentially be useful as a resource for teaching and learning in further and higher educational institutions. Facebook tops the charts in social networking space, but when it comes to social messaging on mobiles WhatsApp walks away as the winner (Spohr, 2013). Facebook have recently purchased the popular social mobile app (Tech2, 2013). However, the use of social media has brought about numerous logistical issues and ethical issues relating to interactions with students. For example, the use of some tools in educational institutions is rather informal raising problems of accessibility and inclusion. Based on this phenomenon, we will conduct research to explore the usage of social networking sites and mobile social apps within further and higher education. We will use the survey method to ask students and staff their views on the use of this technology for learning and communication purposes. In this way we hope to compare the views of students in higher education on courses in Music Business and Psychology. While self-report methods are inherently subjective, we believe it is important to explore how both staff and students both use and view different features of these technological tools. Using focus groups, we hope to identify the main themes concerning the use of educational technology for staff and student groups. A larger sample will be obtained using a questionnaire to garner opinions on the main concerns raised. Analysing this data may help in providing recommendations for educational institutions, keeping in mind the important logistical and ethical issues some are unaware of.

Keywords: Information Communication Technologies, Higher Education, Social Media, Social Mobile Apps, Music, and Social Sciences

1. Introduction

The debate within higher education institutions (HEI) is rife talking about the issues surrounding the use of information and communication technologies (ICTs) for both students and staff interacting for social as well as educational purposes. However, there is a genuine lack of academic research in this area not just in the areas of Music and Social Sciences but also any other field for that matter (Garrison and Anderson, 2003; Gikas, 2013; Veletsianos, 2012).

The aim of this paper is to better understand the evolution and development of how ICTs are used in higher education, by both students and staff, and the practical and ethical issues that are associated with using these technologies.

2. Literature Review

2.1 ICTs Defined

ICTs are commonly defined as technologies that provide access to information through telecommunications. It is similar to information technology (IT), but focuses primarily on communication technologies.

This includes the Internet, wireless networks, cell phones, and other communication mediums (Tech Terms, 2014). The different types of ICTs include the following:

-
- Email
- Virtual learning environment (VLE)
- Social networking sites (SNS)
- Social mobile applications
- User-generated content sites

- Video-conferencing and voice-over internet protocol (VoIP)

In the past few years, ICTs have provided society with a huge variety of new communication capabilities. For example, people can communicate in real-time with others in different countries using technologies such as instant messaging and video-conferencing. Social networking websites like Facebook (FB) allow users from all over the world to remain in contact and communicate on a regular basis.

2.2 ICTs in Higher Education

Until recently, there has been a definite lack of research conducted into the potential for integration of ICTs to help people learn in higher education (Garrison and Anderson, 2003). Despite the constant growth of ICTs, educators are only just beginning to comprehend the potential for technology to help students construct their own meaning through various learning activities (Eynon, 2005). Not only through the use of email and VLEs but also social media sites.

It is now thought that ICT plays a vital role in the future of education in the UK and throughout the world (Tongkaw, 2013) and is an important catalyst and tool for inducing educational reforms that change our students into productive handlers of knowledge (Eynon, 2005). From qualitative (Fullan and Stiegelbauer, 1991) studies it has been often argued that staff development is a very crucial factor in the process of adopting and implementing ICTs in education. However, this is not something that is being addressed practically, and so the issues continue arise year-on-year.

2.3 The Growth of Social Networking Sites

Social networking sites (SNS) such as Facebook and Twitter are examples of ICTs that have been widely adopted by students outside of higher education institutions, as well as in, and could potentially be extremely useful as a resource for teaching and learning in the future. Despite a clear lack of academic research in this area, there is a plethora of online articles talking about issues of young people, and people in general, using social media and social mobile apps and the implications, which is surely where attention must be focused in terms of moving this debate forward relative to ICT use in higher education.

Facebook has been at the forefront of social networking for more than a decade, and recently celebrated its 10-year anniversary with its 1.23 billion online users, adding 170 million in just one year (Kiss, 2014). The site is now worth $135bn with revenues of $7.87bn in 2013, including $1.5bn in profit. Globally, 556 million people now access the site every day on their smartphone or tablet and at the end of 2013, for the first time, Facebook made more than $1bn in revenue from mobile advertising in just one quarter (Kiss, 2014). Moreover, these billions of US dollars for buying a little app is one of the main critical issues of SNS because the users pay with their personal data.

However, in the last quarter of 2013 Facebook saw a "steady decrease in daily users, specifically among teens" (Olson, 2014), with several media outlets discussing the future of social networking and whether it still appears to a vital demographic. This means that teenagers are still on Facebook but they are just not using it as much.

2.3.1 Facebook's Purchase of WhatsApp

Facebook tops the charts in social networking space, but when it comes to social messaging on mobiles WhatsApp walks away as the winner (Khedekar, 2013). Figures clearly show that WhatsApp has been ahead of Facebook in terms of market share with 44% of the consumer demographic, as opposed to Facebook's inferior 35% (Khedekar, 2013).

As a result, over the last few months Facebook have been in talks to buy out the popular social mobile app (Tech2, 2013) and a deal was done on 21st February 2014 for an estimated cost of $19 billion (Rush, 2014). However, Facebook is now being investigated by the Federal Trade Commission, with growing concerns over the threat to its 450 active users' privacy (Neal, 2014).

Therefore, despite a lack of academic research in the area of ICT use within higher education, there is much debate ensuing over issues of using social media and social mobile apps generally in everyday situations.
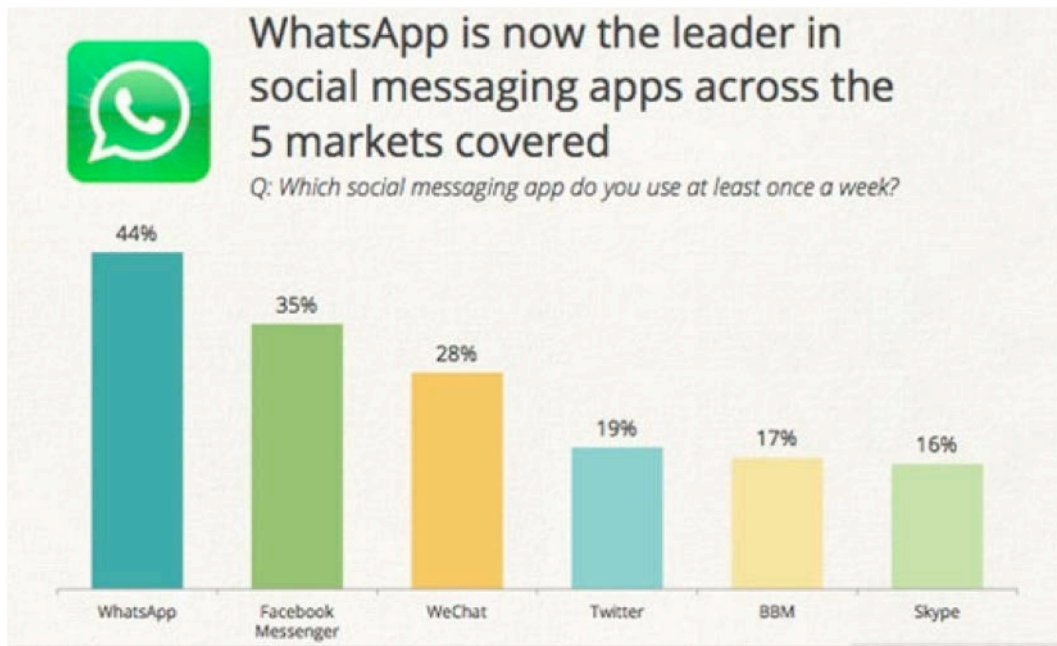
Figure 1. WhatsApp is now the leader in social mobile apps (Khedekar, 2013)

2.4 Rationale

We are interested in both usability and ethical issues, and comparing the views of students and staff. It appears that there is a dearth of studies examining staff views or indeed ethical issues, both in relation to ICTs, but specifically social media usage. Lin (2007) is one of the few studies to examine ethical issues in the use of technology in Higher Education and found that learning technologists were aware of issues surrounding privacy and accessibility although they were also concerned with the more common ethical concerns surrounding copyright and professionalism.

In terms of social media, Reynol (2013) found a complex relationship between use of Facebook and student engagement, as some Facebook activities were positive predictors of student engagement yet others were negative. This complex picture does not help to resolve the findings of a previous study by Reynol in 2012 which found that overall Facebook activity is negatively related to academic performance and time spent preparing for class.

Gikas and Grant (2013) carried out student focus group interviews to investigate student perspectives on communications technology including social media and found that while there was enthusiasm for increased interaction, and this highlights an emerging trend that goes beyond using the technology simply for accessing resources, students are concerned about the lack of formal training or support given by their institutions and interestingly are aware of the problems of distractions and blurring the lines between formal and informal learning. Deng and Tavares (2013) compared students views of Facebook and the online learning environment offered by the institution (Moodle) and found that while students were much more active on Facebook, it is not clear whether this is due to enhanced user interface features or whether it is a reflection of social bonds that result in more spontaneous and organic communication quite separate from the formal institution rules. The authors end with some interesting questions regarding the quality of communication in such different contexts.

While there seems a dearth of research relating to instructor views of social media, a review by Hew (2011) uncovered a number of interesting experimental studies on the effects of teacher information available online, while the few studies that surveyed teachers found that most found it useful for posting resources and the conclusions overall are that Facebook has very little educational use.

Veletsianos and Kimmons (2013) carried out an interesting study on staff views of social networks using phenomenological interviews. The main conclusions highlighted important ethical concerns regarding personal and professional responsibilities, boundaries and concerns regarding the nature of communications online and whether this was an efficient use of time. This latter concern mirrors previous studies concerns from students regarding distractions online when using social media.

We believe that the studies above highlight common concerns that have arisen regarding the use of social media in education, and that the ethics and views of staff involved are two areas that have been overlooked. To this end, we decided to compare students and staff views of ICTs, another issue is that studies are increasingly disparate due to focusing on specific new technologies arising, using a structured interview technique to highlight ethical concerns.

3. Methodology

The method used to carry out this study was the survey method, specifically focus groups designed to interview groups of four people (see information and consent form in appendix 1). The focus groups were designed to last around 15 minutes and were structured around the following questions:

1. What kind of communication technologies and/or mobile applications do you use?

2. What do you think are the benefits of communication technologies in education?

3. What do you think are the problems concerning the use of communication technologies in education?

4. What are the reasons you might not use specific types of communication technologies?

5. Do you think there are any ethical issues surrounding the use of communication technologies in education?

6. Are there any practical issues you think are important to consider when using these technologies in education

7. How do you think communication technologies could be improved for the purposes of education?

3.1 Participants

Quota sampling was used to target and recruit specific types of participants in order to fulfill the overall aims of this study. Two staff focus groups were conducted (one music, one social science) and four student focus groups were conducted (two music, two social sciences) at Perth College UHI (University of the Highlands & Islands). One researcher led the focus groups from the respective subject areas asking identical sets of questions for each focus group. We thought it would be interesting to compare the views of students and staff from different curriculum areas in order to ascertain if there were common concerns out with specific curriculum areas.

3.2 Materials

Questions (see above) and information/consent forms were used. Focus groups were conducted in empty rooms in the college and suitable recording devices were used (recording applications on smartphone-Mini recorder and IPhone).

3.3 Procedure

Participants were approached and asked if they would like to take part in a group discussion at a mutually agreeable time- this was organised via email. Once a suitable date/time was agreed the researcher met the participants and gave out the information/consent forms to read and sign before the discussion took place. All participants were asked if they would like to ask any questions before the discussion started, all were made aware that the discussion would be recorded and all data would be treated with the utmost respect. There was no time limit although discussion was centred on questions posed.

3.4 3.4 Results

Due to the structured nature of the discussions, the results were gathered by identifying central themes arising from each question.

The main themes from each group are summarised in Table 1 below. Only staff seemed majorly concerned about ethical issues such as inclusion in terms of all students being able to access the different types of technology used.

Interesting practical issues regarding ease of access as a large majority in all groups experienced problems accessing the institution's virtual learning environment (and email) and thus missing notifications from education technologies that seem much easier on social media sites. Nonetheless, many expressed concern at the increase of distractions when using social media in education.

	Positives	**Negatives**
Staff (Music / Social Sciences)	Familiarity (applications/devices). Access (Improved particularly when using FB consequent to poor UHI email). Speed (ease of communication with FB, messages received in timely fashion). Availability (Subject to usage). Convenience	Over familiarity of student/lecturer. Increasing workload (multiple systems of communication resulting in repetition). Ethical dilemmas (over-familiarity, inclusion, cyber-stalking). Informality Possible litigation. Discipline.
HNC students (Music / Social Sciences)	Access Easier to hold discussions as can view replies instantly on FB Link to interesting content easily	Distractions Increased access to inappropriate content Increase of unreliable information Need to keep life and work separate
Degree students (Music / Social Sciences)	Access Keep up to date wherever you are, Instantaneous, brings peer group closer together Direct link to all knowledge e.g. exam timetables Handing in work regardless of location, admin cut down, much quicker	Distractions Formal/Informal nature- feel embarrassed to post on discussion board and for lecturers to see problems.

Table 1. Key themes arising from focus group discussions on use of social media in education

These results are interpreted in more detail with reference to individual quotes in the findings and discussion section.

4. Findings and Discussion

4.1 Music Staff

Music staff were generally positive about the use of ICTs in higher education, and regularly engage with social media:

"I will openly admit that I use Facebook with my students because they respond to that, and they know that if I want to get in touch with them …"

"I think they're beneficial to students because that's the real world and that's the way it's moving … it's a lot quicker and instant to speak to people using those technologies."

However, there were reservations about how it is used to communicate with students:

"I'm on the other end of that [scale] we use Blackboard (virtual learning environment), that's how I communicate with my students. I'm not against using Facebook but it would have to be a specific Facebook page set up for the department."

One key issue is that the staff group expresses a concern for the practical issue of students not fully engaging with ICTs in higher education:

"It's amazing the number of students that still say 'I haven't got internet at home' … I find it quite surprising that students are would say that."

Also, privacy is a reason for staff disengagement with social media, such as Facebook, worrying about the line that could be crossed between lecturer and student:

"Maybe privacy issues … so you're not actually in control of that content I suppose."

"It's social media. It's called social media for a reason. It's for social purposes, not for educational purposes. Again, it is just privacy really …"

However, there was a clear split of opinion within the focus group about whether or not it is ethical to fully engage with students via social media, for example, accepting a Facebook request:

"I would because I would only use my [Facebook] page for two things with people here [at Perth College] or with dance, so I know there's no chance of another photo popping up."

"As soon as I started working here I cancelled my old Facebook page, just because there's just stuff that I wouldn't want students to see."

Overall, Music staff were positive about the use of ICTs, including the use of email and Blackboard in higher education, although there was a split opinion on how social media could and should be used within the higher education system. It was suggested that some kind of integration into the current virtual learning environment might be a possible long-term solution:

"I think it might be good if there was an app for Perth College UHI that would have you immediately into Blackboard and your email all in the one … so that it's all integrated."

4.2 Social Sciences Staff

Social Sciences staff was also fairly positive regarding the use of ICTs in higher education, particularly social media, although some concerns arose particularly regarding the functionality of the institution's learning environment and that students must get used to virtual learning environment being offered:

"As a general thing is that we are supposed to be preparing students for the place of work so that does not mean they get to choose what they use at work. They will be told they are to use this, this and this."

Another frequent concern from staff members was the tone of communication in different environments and boundaries:

"Of course another ethical concern with the likes of FB is you can introduce over familiarity between two people very easily as D was saying. It is very easy to overstep that mark."

However, the majority of the group was positive about the potential benefits of using social media and one in particular offered the following distinct advantage:

"Can I also put in a little selfish thing in that particular one as well? I feel the use of Facebook page has reduced the amount of people battering on the door looking for me. Hmm because they will put something up on FB or

they will 'PM' me and I told them at the top of the year I was quite happy for them to 'PM' [private message] me."

While staff members were generally positive they were also (unlike the student groups) wary of potential problems including inclusion (what happens if all students do not have access to social media for course information) and litigation (several instances of inappropriate conduct and even bullying on student group pages discussed).

4.3 Music Students

The focus groups conducted for the Music students had a varied response to the Music staff as they were less open to the idea of lecturers seeing their online presence, particularly with social networking sites such as Facebook.

4.3.1 HNC Music

HNC students have frequent problems with logging into Blackboard and accessing email from home:

"When you can't log into Webmail at home, that's a problem, because there's a lot of information passed through that. If you can't access that, then it's pretty useless … Yeah, when I'm at home I can't log in."

The concept of staff inclusion was a theme throughout the discussion relating to social media groups that have been formed between students for peer support and their apprehension to include lecturers in those groups. There were mixed views on whether students would feel comfortable using social media as an alternative to contacting lecturers directly:

"I wouldn't use Facebook Chat to talk to lecturers …"

"I did almost Tweet my lecturer this morning to say I was going to be late. "

Students said they would add a lecturer as a friend on Facebook if they were socializing, but if it were purely professional then they would not engage it that manner. One solution to encourage the use of alternative ICTs in higher education, other than social media, was to ban Facebook and Twitter in the classroom, as students admit that it is a constant distraction. Another option is, rather than create a mobile app would be the integrate all ICTs into Facebook:

"For students to not use any social media as it's a distraction … or if social media was integrated into Blackboard that would be good."

4.3.2 Degree Music

Degree music students again focused most of their attention on social media, as well as email and the virtual learning environment Blackboard.

"With stuff like Facebook you can create a group where you can communicate and share ideas as a class and with your tutors as well. You can get posts and everything … same as email."

"To save large files, Blackboard's a useful tool. I think there's a lot of scope for ways that social media can be useful in higher education. In terms of communication between a class and their lecturer, it's good for maintaining constant contact, which is fairly instantaneous. Discussions can develop rapidly and be elaborated on in real time, if the interest is there with the participants."

However, they quickly highlighted the practical and ethical issues using ICTs, specifically social media, for example, lethargy and social exclusion:

"The problem might be that people end up getting caught up with the technology or some people might think 'I'll not bother coming into class because my teacher will just send me the details'."

"If social media, or networking, becomes a large part of the learning but there are a percentage of people that aren't utilizing it, aren't included in discussions, there's a danger that they'll become alienated from the rest of the class."

One suggested solution to these issues was training and education about the appropriate use of ICTs in higher education to compliment teaching and learning:

"It actually helps, if the person doesn't know, while they are learning about a subject, they can be taught how to use the social media software."

4.4 Social Sciences Students

The focus groups conducted for the Social Science students were once again very different from the Social Sciences staff discussion, as students were generally hesitant of embracing social media for education, yet less aware of any serious problems such as those discussed by staff.

4.4.1 HNC Social Sciences

The HNC Social Sciences students were perhaps most vociferous regarding the distractions on social media sites although some would offer alternatives such as twitter:

"There can be a lot of rubbish on Facebook that sidetracks you from what you want to do …"

"If using social networking the distractions, easy to just go and chat to someone…"

"Twitter seems a lot more educational compared to Facebook …"

Another important concern that arose was regarding the informal nature of social media sites and whether the information would be reliable or indeed accurate:

"Because information is so quick and easy I might be tempted to go and ask a classmate rather than lecturer, the information they give me might not be correct, so I would say that is a downside to using social media …"

Yet again the majority expressed favourable views on the ease of access, particularly in comparison to the educational technology offered by the institution:

"Easier to have a discussion on Facebook … discussions on blackboard take a lot longer to open different replies, can see all the replies and comments."

4.4.2 Degree Social Sciences

Degree students were enthusiastic regarding the ease of access communicating with others via social media, and many found it useful to access course information quickly:

"I think it brings your peer group much closer together as people you may not speak that often you can easily contact through networking sites …"

"Easy to find out information quickly like exam times."

However, many were surprisingly in favour of traditional learning environments and bemoaned the distractions on offer in social media sites:

"In a better frame of mind if in a designated learning environment …"

"Find it difficult to concentrate if working from home with distractions like Facebook …"

5. Conclusions

From the social science discussions it seems apparent that there are problems with existing technologies for education yet these may not be easily resolved by adapting social media technologies. Perhaps we need to modify existing systems to take on the best features of social media sites, particularly ease of access and more instantaneous communication. The results also reveal that we need to think more about how these technologies are used by staff and students as sometimes it seems that the intentions of educational technologies are at cross purposes from how they are actually used (students seem very reluctant to post informal queries on learning environments yet quite happy to discuss on social media sites). Results from all groups suggest user input on use of features and better guidance on purpose of tools is required to enhance the effectiveness of technology in education. It appears that many students do not view ethics as a problem, while access seems to be an issue for all.

Overall, this study suggests that students and staff have important but different views with regards to the use of ICTs in education. Access may be critical, but the most important finding from this study may be to highlight the potential problems that institutions may face with regards to ethical and practical issues. While students are unsurprisingly not aware of such issues, the fact that many staff members are also unaware is revealing and perhaps institutions should be doing more to clarify the boundaries and procedures for all. Indeed, the results corroborate previous findings regarding the enthusiasm yet confusion over the increased use of social media in education (Gikas and Grant, 2013; Veletsianos and Kimmons, 2013) and confirm these views are voiced by staff and students alike. While this study highlights important practical issues regarding accessibility, and the lack of knowledge surrounding ethical issues, the most fruitful area of research may lie in ascertaining the distinction between formal and informal learning environments (as highlighted by Deng and Tavares, 2013) in order to obtain the best of both worlds.

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Ranking the Authenticity of Social Network Members

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Abstract: The aim of the presented work is to define methods that measure the probability of impersonating social network members. There are known criminal cases in which adults pretend to be youngsters in order to search for potential partners for social purposes, and then in personal meetings, unravel their veritable face. Alternatively, in contrast, women have seduced young boys through the network by making an appointment, and afterwards, during a personal meeting, trapping their victim and later murdering him, on a nationalistic background. The above examples encourage the establishment of the scientific domain of *style-signature* investigation, which could enable the potential victim to estimate the reliability of the interlocutor, his real personality, and then expose the impersonated interlocutor.This methodology is based on computer-assisted cognitive behavioral therapy methodology (CBT). CBT was originally developed for psychological treatment and can be used to characterize personalities. This methodology can also be used to reveal the individual's personality disturbances and to evaluate the reliability of a witness. CBT methodology assumes that the cognitive thoughts of people are expressed in their language. In the literature, about ten categories of thoughts have been determined, and so-called *distorted thoughts* indicate a behavioral deviation. Based on the above assumption, it is possible to map thoughts, including *distorted thoughts* and analyze them methodically with the help of linguistic tools. These tools should be able to scan the mapping and discover *distorted thoughts* as classified by the CBT method. We will use extreme situations as examples to illustrate *distorted thoughts*. The mentioned situations will refer to time description (always, never), location (everywhere, nowhere), quantity (everything, nothing, nobody), possibility (must, forced, incapable), amongst others. These types of expressions leave no doubt as to their meanings.

Keywords: parsing, pattern-matching, statistical parameters, CBT, quantitative-semantic-class, reliable Internet.

1. Introduction

The linguistic analysis is performed at two levels: semantic and syntactic. The first stage is the semantic analysis. Here, the vocabulary of the sentence is analyzed.

The known linguistic term, *quantitative-semantics,* is given special significance since it enables a pre-ranking of nouns, adjectives, and adverbs beyond their regular usage. *Quantitative semantic* analysis searches especially for superlatives such as "*never*", which indicate an extreme case. This analysis is supported in the first stage by using an expression termed "*distinguished*".

In order to find *distinguished* expressions, it is recommended to use in the second stage of the analysis a methodology borrowed from *formal-languages,* a field in computer science. This analysis is supposed to strengthen or eliminate the findings found in the first analysis stage, the semantic analysis.
Besides the quantitative class, *slang-word* sets of keywords may be created that are compatible with various personalities, for example: young persons, senior persons, women and men. A *slang-word-class* consists of slang words corresponding to the language and to the properties of a class and their frequencies of use.
The text analysis gives the characteristics of a treated person, which is compared with the user's impression of the analyzed text.

The present paper is interdisciplinary in its functions and applications. The computerized linguistic analysis presented here can be used, for example, in the disciplines of law, sociology, and psychology.

Law, linguistics, and their connection to computers have been previously studied (Cotterill 1968; Gibbons 2003; Shuy 1966; Olson 2004). The present article focuses on linguistic analysis of Internet chat texts; other aspects of a reliable Internet were described in (Bailey, 2011; Birman, 2005). A similar analysis may be performed upon cross-examination (Ophir 2013; 2014) in order to evaluate the credibility (Colma 1970; Salhany 2006; Glisan 1991). This paper is about the use of semantic analysis in psychology in that the vocabulary of thoughts is checked. *Distorted thought* text is characterized by the use of superlatives such as "*never*". The definitions of *distorted thought* has been defined and categorized by the developers of CBT (Burns 1999; Greenberger and Padesky, 1995). These categorizations can be used to automatically recognize and classify written statements by a computerized analysis (Kearns 2000; Knuth 1964). This analysis is based, in

the first iteration, on the corresponding use of expressions called "*distinguished*" words. To find these *distinguished* terms, which possibly indicate cognitive distortions, quantitative semantics is introduced.

The present article's analysis is based on the title's two main components, namely linguistics and psychology. Linguistics' two main branches, semantics and syntax, were used in the development of a software tool called Software Human Reliability Estimator (SHRE). SHRE can be used as an alternative to a polygraph. This estimator can be applied in text analysis of a chat, regarding the aspect of reliability of the callers in the dialog. The syntax's extended treatment is represented by the following elements: BNF definitions (a computer sciences method using formal languages for defining a computer languages' syntax), speech parts decomposition and parsing tree construction.

Both of the linguistics parts complement each other and they form a validation of the results. Further analysis is done using the program's psychological aspects which estimates the reliability of the individual and the results obtained.

The psychological section, called *"Evaluation",* recognizes a cognitive distortion and if required, replaces it by a proposed correction. The correction of the *distorted thought* isn't generally the purpose of the SHRE, but some of the software's applications may be in guiding the user towards self-improvement.

2. Semantics: Quantitative Semantics Preface

The linguistic term *quantitative-semantics* is widely used in the context of the introduced application*. Quantitative-semantics* allows for a type of scaling of primarily adjectives and adverbs beyond their common usage.

Quantitative-semantics analysis looks in particular for superlatives such as *"never"*, which hints at an extreme case. The analysis is based, in the first iteration, on the corresponding use of expressions termed "*distinguished"* words, representing distortion thoughts. To find these *distinguished* terms, one must analyze a syntactic sentence. This should reconfirm the indications iterated in the first stage.

Using computerized sentence analysis, we can quickly classify texts using the semantic-quantification methods shown below. Computerized quantitative-semantics can be used as an auxiliary tool for psychology and for self-psychotherapy.

Cognitive behavioral therapy (CBT) is currently a very popular method among psychotherapists and was the impetus for developing *quantitative semantics.* Its main advantage lies in its simplicity and in its schematic methodology. These characteristics facilitate the creation of a computer-implemented cognitive therapy model, iCBT ("i" stands for information). iCBT is a computerized CBT that deals with an auxiliary computerized *information* processing,

The crux of this model lies in finding the person's so-called "*distorted thought*". A *distorted thought* is a thought that tries to represent reality, but instead gives a distorted or unrealistic result (Burns 1999). For example, the following sentence represents a *distorted thought*: A student who has received a grade C concludes "*I am a complete moron*…". Another example deals with someone who, after quarreling with his girlfriend, concludes: "*Girls always spoil the relationship. I will never be able to hold on to a girlfriend*…"

Cognitive thoughts may be formulated by the human brain into a natural language, namely, into meaningful spoken or written sentences. Therefore, the analysis of any thought is actually performed on the sentence, the thought's linguistic counterpart. *Distorted thought* text is characterized by the use of superlatives. In order to help to find them in an analyzed text, the following additional general terms are introduced for better understanding the further formulations.

- *Human Factor* – the aspects that deal with behavioral sciences, namely, psychology and more specifically, CBT – cognitive behavioral therapy.
- *Languages* – a natural language is the interface between subconscious thoughts and conscious speech.

- *Measurement* – the measurements are performed to evaluate the tested text. The **distorted thought** is then transformed into its normative counterpart.

3. Semantics: Quantitative Semantics – Detailed Description

Semantics (Kearns 2000; Ferdinand and Harri, 1986) is a linguistic area of study that tries to parse the significance of a sentence and its parts. This is one of the required fields in cognitive thought analysis. In order to better serve the needs of iCBT, we will propose some ranking of the vocabulary.

This ranking is termed hereafter as **Quantitative-Semantics**. It is defined as follows: The parts of speech, for example, adjectives, adverbs, and nouns are organized into "family-groups" containing sorted members in the family group. Each group treats some property represented by an abstract noun (or term) such as **speed**, **hunger, and feeling (hot, cold).**

The sorting is done according to the intensity of the meaning of the word in the family-group, starting from a lower intensity, proceeding through moderate words and then to the higher ones. The members of the family-group appear with their attached intensity value. For example, the sequence of the following words represents the idea: **{{cold, -2}, {hypothermal,-1}, {lukewarm, 0, {tepid, 0}, {warm,1},{ hot,2}}.**

This ranking will first be presented in BNF notation as illustrated in Figure 1 with the auxiliary notation as seen in Figure 2, and then its use will be analyzed. This is only a partial list of a much longer one that is being created to indicate contrast.

```
1.  <determining-term>::=<extreme-term>  | <moderate-term>
2.  <extreme-term>  ::= <minimal-term>  | <maximal-term>
3.  <minimal-term>::= <minimal-timing-term>  | <minimal-location-term>  |
        minimal-personal-term>  | <minimal-still-term>
4.  <maximal-term>  ::= <maximal-timing-term>  | <maximal-location-term>  |
        maximal-personal-term>  | <maximal-still-term>
5.  <moderate-term>::= <moderate-timing-term>  | <moderate-location-term>
        | moderate-personal-term>  | <moderate-still-term>
6.  <emotional-term>::= < negative-emotional-term  > |
        < positive-emotional-term>
7.  < negative-emotional-term  >::= sadness | unhappiness |despondency |
        depressing | anxiety | restlessness | unease | dissatisfaction |
        discontent
8.  < positive-emotional-term>::= happiness | calmness | satisfaction |
        contentment

9.  <minimal-timing-term>::=  never | not at all | not at any time  | not ever |
        not in any way
10. <maximal-timing-term>::= always | constantly | without stopping |
        anytime
11. <moderate-timing=term>::= sometimes | once in awhile | occasionally |
        often | seldom | frequently | in many cases

12. <minimal-location-term>::= nowhere | not anywhere | in no place
13. <maximal-location-term>::= everywhere | in every place | in every location
14. <moderate-location-term>::= here and there | somewhere | someplace |
        some location | any place
```

(a)

Figure 1: Defining a Grammar, which can generate the extreme terms, so called "*distinguished*" words indicating *distorted-thoughts:* (a) main set, (b) continuation.
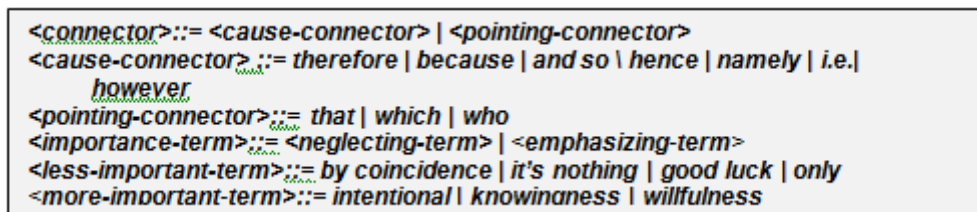
Figure 2: Definitions of auxiliary terms

4. Syntax: Defining Bacchus Normal Form or Bacchus-Naur Form (BNF) Notation

The BNF method for describing the linguistic characteristics of various *distorted thoughts* is widely used in defining the syntax of programming languages (Knuth 1964). This technique will be used in the context of iCBT. Understanding this technique is essential for further understanding this article.

For its notation, the BNF methodology is based on using symbols as shown in Figure 3 (Chomsky 1957). The *sharp-brackets* contain the terms to be defined and the terms that already have been defined. The set of two colons and the equal operator define the assignment operator in *BNF* notation. "**|**" denotes the alternative operator, as shown in the example in Figure 4. The *rectangle-brackets* denote an option. The *tilde* operator denotes a negation or complementation. The *space* denotes the concatenation operator and the regular parentheses control the precedence of the operators as they do in algebra as shown in Figure 4. The three dots denote a repetition.
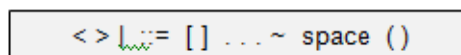
Figure 3: BNF's conventional symbols
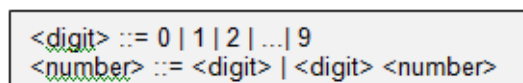
Figure 4: An example using the BNF symbols to define the term *number*.

5. Syntax: Analysis

5.1 Syntactic parts

For the computer to accurately analyze a sentence, the sentence must be decomposed into its syntactic parts. Assuming that the sentence's words are found in a dictionary along with their corresponding part of speech, e.g., an adjective, noun, verb, and adverb, it is possible to classify the sentence's words into their syntactic role within the sentence. Knowing the syntactic function of the sentence's words such as the subject, object, and predicate will help analyze the semantics or the meaning of the sentence. This meaning enables us to automatically recognize **distorted thoughts.**

5.2 Examples

A simple sample sentence "**The best student is feeling awful"** will be analyzed. Initially, the BNF corresponding rules are applied as illustrated in Figure 5 and the corresponding derivation tree, show in Figure 6, is obtained using the **syntactic-structure** method. The usefulness of the BNF notation and of decomposing the syntactic structure will be further discussed.

```
<sentence> ::= <noun phrase> <verb phrase>
<noun phrase>   ::= <adjective> <noun-phrase>|
         <adjective><singular noun>
<verb phrase> ::= <verb> <adverb>
<verb>  ::= <singular verb>| <composed verb>
<composed verb> ::= <auxiliary> <verb>
<auxiliary> ::=  is | are | have
<adjective> ::=  the | best
<noun> ::=  student
<singular verb> ::= feeling
<adverb> ::=  awful
```

Figure 5: Derivation – BNF rules of a sentence: *"The best student is feeling awful."*
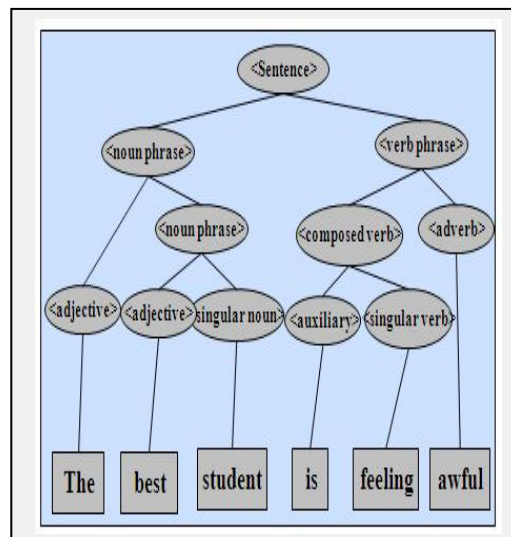
Figure 6: The derivation/parsing tree of the sentence, **"The best student is feeling awful",** uses the rules from Figure 5.

A more extensive example of reliable text analysis is given by a sample of a cross-examination transcript given in Figure 7 (Salhany R., 2006, 86-87). The background story of the interrogation in Figures 7(a-b) is as follows: Alfred Rouse was prosecuted for the murder of an unknown man. His counsel, Donald Fennimore, led him through the various lies he made and asked him to explain each of the lies. The counsel's obvious purpose was to lessen the impact of any cross-examination as to why he had lied. This is similar to defense counsels leading

defendants through their criminal records to dampen their effect on the jury before the prosecutor has a chance to raise any part of the record against the defendant.

Norman Burkett, who prosecuted Rouse, decided directly to raise the issue of those lies in his first questions. Even with the advance preparation of the defendant by the defense counsel, the counsel cannot foresee the prosecutor's questions and therefore the defendant is forced to improvise answers and then falls in the trap laid out by the prosecutor who uses sophisticated questions. The answers of the defendant will be analyzed by the methodology introduced next.

The cross-examination shown in Figure 7 illustrates the witness's **distorted-thought** through his use of expressions such as **always**, **never, which** are **extreme-time** expressions, indicating a "**minimization and magnification**" distortion type as previously depicted in Figure 1. The presented technique is even more effective in analyzing the **character-evidence,** which is composed of longer texts with fewer interruptions.

Q. Rouse, when you told my learned friend that the lies you had told in Wales were unfortunate, what did you mean?

A. Well, I think that it is always best — I have always been noted for telling the truth for the whole of my life; I am not used to telling lies. At the time I thought it was the best thing to do.

Q. Why? Why was lying better than telling the truth?

A. Because there are many members of the family, for one thing, and I should have to tell the story over and over again, and I did not like to tell it with ladies present.

Q. Why tell it at all, if you told a lie?

A. I was asked where my car was.

Q. You think it was unfortunate that you should tell lies in Wales?

A. It turned out to be subsequently, now, perhaps against me.

(a)

Q. What do you mean when you say that it has turned out against you?

A. People seem to think I did tell lies, and I admit I did tell lies. My name has been clear up to now of lies.

Q. Do you think an innocent man might have told the truth?

A. Yes, no doubt, to your way of thinking.

Q. No; I merely want the facts?

A. I think I did the best possible thing under the circumstances.

Q. Still, do you?

A. Yes.

Q. Still?

A. If I had given a long explanation to them they would have kept on asking me questions about it and it would have been very unpleasant for them.

Q. Is it the fact that all the people whom you saw, from 2 o'clock on the morning of the 6th to 9:30 on the evening of the 7th, you never told a word of the truth to any one of them?

A. I do not know what you mean by word of truth. I had lost the car, and I intended to go down there.

(b)

Figure 7 (a), (b): A transcript of a cross-examination, in which our analysis may improve witness evaluation (Glisan, James Lindsay. 1991 p. 86-87).

Figure 8 presents a virtual conversation based on distorted thoughts **using** the so-called distinguished words such as "should", "never", and the superlatives: "most beautiful", "very nice" and "cleverer",

> -You look very nice in the picture you sent me. You are the most beautiful girl I have ever met. I have never seen a cleverer girl and one who is nice like you.
>
> - Really? I am flattered.
>   …
> - You should wait for me in the railroad station on Mc Milan Street.

Figure 8: A suspicious chat including a few words indicating distorted thoughts.

6. Evaluation: Identifying cognitive distortion

The *Quantitative-Semantics* (QS) and the BNF notation defined before enables the analysis of the sentence's meaning. Such analysis is essential for identifying thoughts having cognitive distortion. The structure (BNF) and the evaluation of meaning (QS) reinforce each other. Namely, BNF enables a more accurate way of classifying the sentence's words into their corresponding QS categories as illustrated in Figure 9. In addition, conversely, the first-iteration of the sentence's word classification may improve the first decomposition.
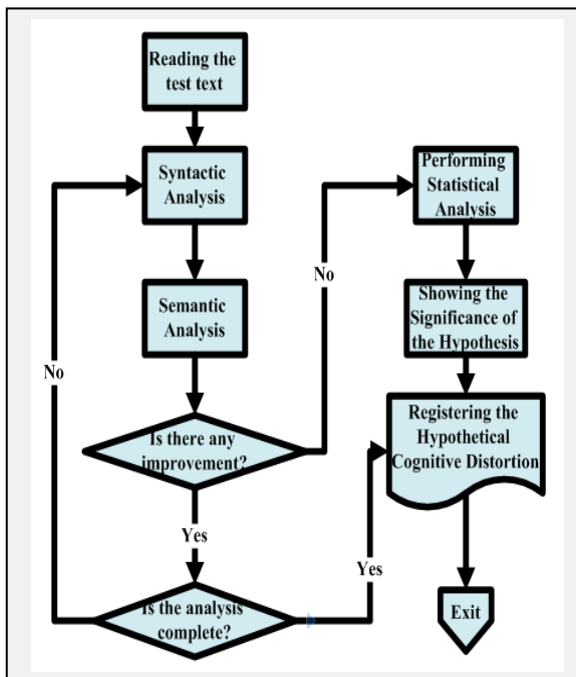
Figure 9: An algorithm for cognitive distortion recognition according the cognitive distortion categories listed in **Figure 10.**

> a. **All-or-Nothing Thinking**
> b. **Overgeneralization**
> c. **Mental Filter**
> d. **Disqualifying the Positive**
> e. **Jumping to Conclusions**
> f. **Magnification and Minimization**
> g. **Emotional Reasoning**
> h. **Should Statements**
> i. **Labeling and Mislabeling**
> j. **Personalization**

Figure 10: Cognitive distortion thought categories (Burns 1999).

6.1 All-or-nothing thinking

A template (1) may determine this type of distortion.

(1)   ~ <maximal-term> , [<cause-connection>] I am(<minimal-still-term> | <negative-label-affront>)

The following example shows the essence of the above template (1.): "I received a grade of 85 in the examination. I am a complete fool; how could I make such a mistake?"

6.2 Overgeneralization

This type of distortion may be determined by a template (2) using the <timing-term> notations taken from Figure 1 and with the <event> notation, which denotes a sentence describing some kind of event.

(2)   <overgeneralization-distorted-sentence> ::=   <maximal-timing-term><negative-event> | <minimal-timing-term> <positive-event>

The following examples use the *overgeneralization* class of thoughts: "I *always fail* the examination."; "I *never succeed* in passing the examination."

6.3 Mental Filter

This **cognitive-distortion** causes the person to perform a so-called **selected-abstraction**. Here the template would be (3):

(3)   [because] <negative-event> , <negative-relation>

Example: "He laughed at her; that person is very cruel."

In order to identify this distortion, the tone can use statistical methods [11] to find significant use of *negative-relation*s in comparison with *moderate-relations* from the same person. The rate given may be compared with the rate known in the person's milieu (community/population).

6.4 Disqualify the positive

Here, the template consists of two components (4), where a *<positive-event>* generally describes a sentence in which the event yields a positive outcome for the subject. The component *<less-important-term>* relates to neglecting (an antonym of emphasizing) term.

(4)   <positive-event><less-important-term>

An example is the following conversation:
-      *You are a very good student. You received a very good grade.*
-      *It is a coincidence. I am just lucky.*

6.5 Jumping to a conclusion:

Drastic decisions are made, owing to bad speculations about the future and an incorrect reading of people's thoughts.

6.6 Minimization – maximization

This class is characterized by using the *<extreme-term>s.*

6.7 Emotional Reasoning

The category of cognitive distortion, *Emotional Reasoning,* is treated according to the template given next (5):

(5)   I am <negative-emotional-term> <cause-connector> I am <minimal-still-term>

This definition can be improved by finding a more general determination of subject I.

6.8 Should statements

To treat the distortions based on *should statements,* we will perform **pattern matching** (see (Apostolico and Galil (Editors) 1997; Navarr 2002; Charras 2004)). The template ***<sharp-conscientiousness>*** is related to the **subject** (the **syntactic-part** of a sentence), where the **subject** is referred to in **first-person** such as I and me.

6.9 Labelled and mislabelled

Labeled and mislabeled *sentences* constitute a class of distorted sentences containing the ***<negative-label-affront>*** attached to an **object** (**syntactic-part** of a sentence). This object relates to the second **or third-person** (**speech-part**).

The difference between the *Labeled-terms* and **Mislabeled-terms** lies in the degree of the reliability. The mislabeled-term group members indicate the existence of **distorted thought**, whereas the members belonging to the labeled-terms are candidates for causing disturbances through cognitive distortions. It all depends on the context in which the terms are used. The tree-structured analysis is helpful in analyzing such a context.

6.10 Personalization

The cognitive distortion category, **Personalization,** is treated according to the developed iCBT methodology. Additional items in the **Personalization** list should be treated as the others. This list should include the following expressions: self-blaming, negligence, fault, and responsibility. This is achieved by defining the template that treats the **Personalization** type of cognitive distortions.

7. Concluding remarks

The whole cycle of the iCBT is schematically described in Figure 8. It should be emphasized that the adjectives and adverbs may be categorized into two classes: superlative and mild.

7.1 Superlatives

The **superlative** class is a class in which the terms can be categorized very easily, suggesting some **cognitive-distortion**. This class contains expressions such as **impossible** or **never**.

7.2 Mild

The **Mild** class contains expressions that express some doubt. Statistically, they more accurately describe reality (Burns 1999) and they may be substituted for the superlative counterparts. This class contains expressions such as *improbable* or *seldom.*

The iCBT (**Computerized CBT**) (Ophir 2012) is a kind of **bibliotherapy** (Weld 2009) that uses reading as a therapeutic treatment method. The presented methodology, together with transformational grammar (Chomsky 1957) supported by statistical methods, transforms an affirmative sentence into an interrogative one andupgrades the reading to an interactive collaboration between the software-system and the user-client.

The advantages of iCBT over **bibliotherapy** lie in iCBT's adaptiveness and therefore, it responds more accurately to the client. In the future, an improved human-computer relationship using audio devices enabling voice recognition instead of the textual input devices will be used. These types of devices can be termed media user interface (MUI) instead of the current graphical user interface (GUI), and will also include audio and other media possibilities.

A further suggestion is that future SHRE developments should quantitatively compare the SHRE results with that of the polygraph. A simple test would be to organize a group of volunteers who would be asked questions by the polygraphs operator. The answers given by the subjects would then be transferred to the software reliability tester and the evaluations can be compared with the polygraphs conclusions. It would be interesting to see the correlations between the conclusions of the two concepts: polygraph versus the SHRE.

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Learning From Others Mistakes: How Social Media Etiquette Distorts Informal Learning Online

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Abstract: Informal learning and information exchange form an important part of interactions between professionals in social media spaces but these spaces also trigger complex performances of self (Goffman 1959, Barbour and Marshall 2012). This paper, drawing upon research investigating the nature and efficacy of collaborative learning between professional participants within social media spaces, expands upon key findings on the roles of self-presentation, and emerging etiquette practices around peer correction. In particular the reported practice of public error addressed by private correction is examined as an important but dysfunctional practice. This work draws upon Vygotsky's Zone of Proximal Development and concept of scaffolded learning, and theories of learning through Affinity Spaces. The work is also informed by the researcher's professional role working with social media and advising on best professional practice in these spaces. The research presented sits within the wider context of emerging research into the changing role of social media in everyday life, including work by danah boyd, Mimi Ito, and Christine Greenhow examining the cultural and educational impact of social media technologies. The underlying research was conducted as part of a masters dissertation project. Two forms of research data collection took place: self-completion online questionnaires completed by volunteer participants (n=44) in October 2011; and follow-up interviews (n=4) conducted using Skype Chat in February 2012. Volunteer recruitment was through convenience sampling of social media channels, predominantly Twitter. The research finds that trust and safety are crucial factors in emerging scaffolding practices, with individuals constructing personal rules and etiquette for dealing with the challenges of social media such as blurred identities. However, issues are identified with a particular focus on the problematic emerging practice of providing private steers and corrections arising from public discussions.

Keywords: social media, informal learning, vicarious learning, Continuing Professional Development, social media etiquette

1. Introduction

Anecdotal evidence suggests that social media are effective as peer learning communities and are increasingly useful tools in continuous professional development (CPD). This paper develops key findings around public and private discourse and correction drawn from research, conducted as part of a masters dissertation project (Osborne 2012a) in late 2011 and early 2012, which sought to investigate the under-explored area of the nature and efficacy of informal learning between professional participants within collaborative social media spaces.

This research has been particularly influenced by the concept of Scaffolded Learning. In Vygotsky's (1978) "Zone of Proximal Development" the learner must be ready and able to progress, and they must be willing and able to use the "scaffold" they are provided with. The scaffold - which might be a steer, new information, advice or similar enabling information - is provided for the learner's development but there is no requirement that the learner make use of it. Vygotsky regards the individual learner and their provider of scaffolding as having agency in an individualised learning process.

This model resonates with the unstructured nature of informal learning mechanisms (as defined by, for instance, the Department for Innovation, Universities and Skills 2008) and with the place CPD occupies in many professionals' lives: opportunities may be provided but it is up to the individual (Friedman, Hurran and Durkin 1999) to exploit these and ensure that they make relevant and beneficial use of what they learn.

2. Methodology

Two research questions were identified to investigate how collaborative learning takes place amongst professional peers in social media spaces, this paper focuses on findings associated with the first of these:

> *What roles do scaffolded learning (Vygotsky 1978) and mentoring play in informal learning practice in social media spaces?*

Two types of data were collected (i) self-completion questionnaires (n=44); (ii) follow up interviews with participants (n=4).

2.1 Self-Completion Questionnaire

A self-completion questionnaire was designed to investigate how participants use and define their own learning process and experience in social media spaces, using multiple-choice and open-ended questions. An initial pilot of the questionnaire took place, and modifications made. The final questionnaire (Osborne 2012a: Appendix II), delivered via Bristol Online Survey, proposed seventeen questions about social media and informal learning in continuous professional development contexts. These questions were accompanied by four demographic questions and a request to indicated willingness to participate in follow-up interviews.

Prior to completing the research questionnaire participants were asked to read and complete a consent form (Osborne 2012a: Appendix I) which required them to confirm that they were social media users as the intended focus was on learning processes and interactions among a wide range of social media users, rather than to draw comparisons between users and non-users.

2.2 Interviews

After initial analysis of questionnaires potential interviewees were identified from those who had responded positively (n=20) to the request for interview volunteers. Six potential interviewees, representing a range of views and practices, were identified and approached, with in-depth interviews (n=4) taking place between 9th and 13th February 2012. Skype Chat was selected as the environment for interviews as this instant messenger or private chat room-like space, mirrors the online and primarily text-based nature of social media.

Interview schedules were prepared consisting of 6 standard questions with prompts (Osborne 2012a: Appendix IV), with additional questions and prompts for each interviewee based on their own questionnaire responses. Interviews were scheduled for 60-90 minutes, though most took 2 hours to complete.

2.3 Participant Recruitment

Participants were initially recruited through convenience sampling of my own extended personal and professional social networks. The questionnaire was launched on Monday 17th October 2011 and initially distributed through my own presences on three social media spaces, Twitter, Facebook and Google+.
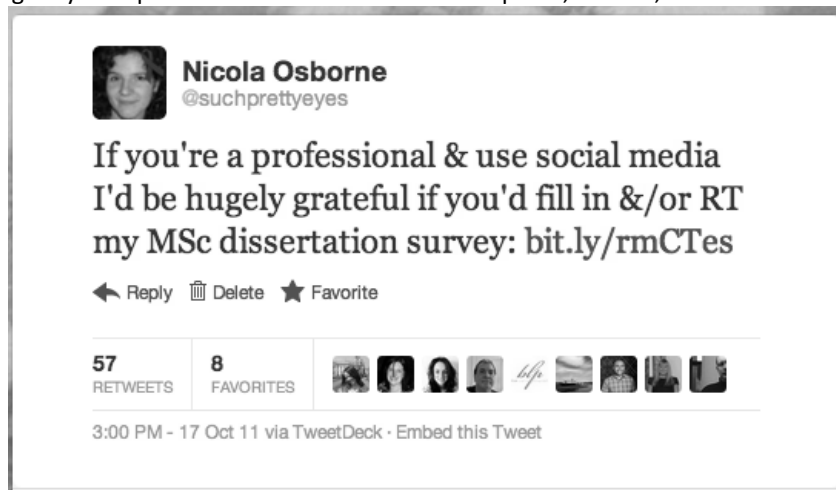
Figure 1: Tweet sent out to recruit potential research participants. Similar messages were shared via Facebook and Google+.

The request for participation was swiftly re-shared through extended networks resulting in 79 attempted completions and 36 completed questionnaires two days after launch, easily exceeding the target of 20 responses. The questionnaire closed on 9th December 2011 by which time a total of 47 questionnaires had been completed with a further 51 incomplete questionnaire attempts. Three questionnaires were omitted from analysis due to incomplete consent forms; findings presented are therefore based upon 44 responses.

2.3.1 Features and limitations of volunteer recruitment

Recruiting volunteer participants through such a personal route does risk gathering a more limited variety of opinion (Rosenthal and Rosnow 1975). This was reflected in the difficulty of identifying suitable volunteers

providing more skeptical or negative views in this self-selecting process. One interviewee, who was one of very few participants with skeptical views, unfortunately withdrew from the process during the interview stage. However, one of the benefits of such a transparent recruitment process was that participants offered feedback on the questionnaire itself, providing insightful commentary on the relatively high incompletion rate, such as concern over the length of the questionnaire.

2.4 Data Analysis

Initial analysis and cross-tabulation of questionnaire data took place in Bristol Online Survey (BOS). Short form textual responses were then exported, anonymised, normalised, and analysed using (i) Excel and Wordle, for illustrative overviews and (ii) SPSS for further exploration through cross-tabulation of multiple variables and running of Chi-Square tests for significance.

Long form textual answers were explored through more manual processes. Responses were copied into the Voodoo Pad wiki application. They were manually analysed for common themes and clustered as sub-pages. This process, informed by the questioning and exploratory concept of "interactive reading" (Dey 1994) allowed key concepts and trends to emerge from this large text corpus and then be clustered and refined into specific findings. The method revealed trends that had not been previously apparent in reading individual responses, and allowed interview transcripts to be reexamined for comparison, particularly around confirmation of trends, contrasting viewpoints, additional context and explanation.

Interview transcripts were anonymized, then analysed with DeDoose, a web-based qualitative data-encoding tool. Broad themes were identified in a first round of analysis, with notes taken by the researcher during interviews used as a source of initial codings. Once coded a second parse took place to ensure consistency. A further reflexive parse of the transcripts was made with particular consideration of the concept of "transposing data" (Dey 1999), interrogating the "what ifs" of the questioning process. Finally extracts from the transcripts were analysed with the Voyant text analysis tool to further interrogate and visualise the most popular or significant terms in texts - particularly clusters of quotes around particular trends (see Fig. 2).

Figure 2: Screen capture of the Voyant Tools analysis of comments from questionnaires tagged as relating to "dysfunctional learning".

3. Findings

Participants were asked to indicate the frequency and type of usage they made of social media and indicated that they were highly engaged: the majority (91%) reported that they use social media tools more than once a day, with no participants reporting use of social media fewer than several times a week. Asked whether they found, through social media, information and links to resources that are useful in their professional life: 43 of the 44 participants indicated that they did. Given the amount of time and energy participants are investing in

interactions in these spaces in professional contexts it is perhaps not surprising that complex forms of etiquette are emerging,

3.1 Risk and reputation in public spaces online

Researcher: Do you use Facebook?

Kate: Yes, but only with a gun to my head!

The idea of different spaces being used for different groups or functions was voiced repeatedly throughout both questionnaires and interviews. Some social media sites were characterised strongly as working spaces, others were consistently seen as purely social spaces. This segmentation may reflect attempts to manage and differentiate multiple performances of identity (Goffman 1959) with tensions occurring, for some participants, around potential blurring of these identities.

For some participants segmentation of social media spaces was a conscious process, as exemplified by Robin:

Robin: Employers who don't allow social media in the workspace are shooting themselves in the foot. I don't mean Facebook, which should be kept for personal interactions with family, but Twitter and Linked in are more important now than email.

Segmentation of particular identities or personas to fit the audiences and expectations of particular social media spaces seemed to be a deliberate strategy employed by a number of participants in this research. They report adopting a number of similar but differing personas (akin to the postmodern selves discussed in Usher, Bryant, and Johnston, 1997), perhaps an informal and social "facebook self" that is distinct from another semi-professional "twitter self" that they adopt at other times. Participants who reported this type of practice framed it in discussions of privacy, of personal space, of managing their identity for the appropriate audience.

Barbour and Marshall (2012), in their examination of the online presences of individual professionals within the "*prestige economy*" of academia, define five academic persona - the *formal self*, the *public self*, the *comprehensive self*, the *teaching self*, and the *uncontainable self*. Each persona reflects varying levels of self-awareness and interest in presenting a professional personal brand online.

This performative aspect, which can be a source of significant anxiety (e.g. Ball 2003), is particularly interesting in the context of social media where authority is as likely to be established through actions and contribution as by markers retained from the real world (name, role, institutional affiliation, etc.). The stakes for such identity performances can be high with several, mainly freelance, participants talking about the positive impact of social media for finding or authenticating skills and of this leading to new paid work.

However, the idea of segmenting spaces and identities in this way was not universal. Many participants, perhaps as a result of accessing social media frequently and in multiple contexts through mobile devices (see Ofcom 2012, Turkle 2008, Turkle 2012), reported on the benefits of blurring their professional and personal identities. Laura, who engages with close colleagues, her professional body and friends via social media, reflected that:

Laura: "If I know someone in a friendly capacity as well as in a professional one, I'm probably more likely to be interested in what they're doing and what projects they're sharing"

Laura's comments reflect those of number of participants who saw blurred identities as providing greater opportunity for serendipitous discovery, gateways to diversifying and improving relationships with peers, mentors, etc. Laura's sense of building up a more holistic and engaging picture of people within her network also connects to one of the strongest themes emerging from questionnaire and interview responses: the central role that trust and a sense of safety play in learning that takes place within social media spaces.

3.2 Scaffolding and correction practices

Rosemary: …if I go out and look for it the information is there or comes to me. People are sending this information out to everyone obviously not just me. I have discussed subjects with other professionals and gained great insight which again are discussions I've instigated rather than a specific forum as such.

As Rosemary articulates, the idea of using a social media community (no matter how ad hoc) as a go-to space for information and support around professional interests begins to confirm social media as a space where peer learning and scaffolding takes place.

The questionnaire sought evidence of scaffolded learning dynamics or behaviours through a series of questions on correction and steers. These seemed the most definable moments of scaffolding as the intervention of a corrective comment or steer can be seen as an attempt to guide or support the learner in their own learning process. The responses seem to confirm that such scaffolding actions do take place. Half of all questionnaire participants reported having been corrected in a social media space, with men more likely than women to report being corrected in a social media space (Table 1). Notably over 60% of participants indicated that they had themselves offered advice to steer or correct a peer and almost 80% of participants reported having observed others being advised or corrected in social media.

Table 1: Responses to question 18(a) "Have you ever been corrected in a social media space" cross tabulated with gender.

18.a. Have you ever been corrected in a social media space?	Female (n=29)	Male (n=14)	Prefer not to say (n=1)	Totals
Yes	11 (38%)	10 (71%)	1 (100%)	22 (50%)
No	14 (48%)	3 (21%)	0 (0%)	17 (39%)
Other	3 (10%)	0 (0%)	0 (0%)	3 (7%)
No Answer	1 (3%)	1 (7%)	0 (0%)	2 (5%)
Totals	29 (100%)	14 (100%)	1 (100%)	44 (100%)

These multiple-choice responses were supported by qualitative questionnaire and interview data. In these responses a significant trend of private correction to public error emerged.

3.3 Trust and shared gifts

A sense of trust, and the safety to take small risks without significant detrimental consequences, is central to learning, particularly in an online context (e.g. Edmondson 1999, Anderson 2008) and this was reflected in questionnaire and interview responses.

When considering what might be unique or special about social media several respondents pointed to an increased sense of trust. Robin, describes how this feels as a user of these spaces for learning:

> *Robin: The interactions are surprisingly intimate and revealing about people's personalities, sometimes almost like reading another person's mind. Oddly, there is often a greater feeling of trust among strangers. Trust and generosity.*

Robin's increased sense of trust was also reflected in many others' responses. However, in their excellent review and synthesis of the literature around identity, belonging and learning processes in (formal) online education Delahunty, Verenikina and Jones (2013) highlight the complexities of negotiating identity and relationships online. This something that was also reflected here, for instance one participant described the sense of vulnerability she felt in a dysfunctional "affinity space" where an absence of trust discouraged shared learning or dialogue:

> *Shirley: Flame wars started all of the time on the pregnancy forum I was on and I think that having spent many, many hours watching that happen has made me wary of ever doing such things in a public space where people can easily feel personally attacked. It's always best to take things off privately if you really need to.*

Trust thus plays a crucial role in participation and the possibilities of learning and engaging in dialogue in social media spaces, whether positively through its presence in safe spaces for learning and discussion, or through the negative impact a lack of trust can have.

3.4 The dysfunctional etiquette of public and private correction

Participants reported very mixed experiences of scaffolding interventions, particularly commenting on the impact of corrections made in public. Ray, Vicky and Maggie all note discomfort with the potential for loss of face or reputation:

> *Ray: It's ok as long as you are not criticising people in public. Just stating points of view and facts is ok.*

> *Vicky: I try and do it gently - more of a 'hey have you seen this link' rather than a direct 'you are wrong' particularly on a public wall.*

> *Research Questionnaire: Have you ever been corrected in a social media space? How was it?*

> *Maggie: Embarrassing - the same way that being corrected in a meeting or in a classroom would be*

These responses sit within the context of participants describing social media as relatively permanent and scrutinised spaces. The increasing newsworthiness of apparently trivial social-media stories (e.g. Bloxham 2012, BBC 2012a, etc.) that elevate the content of individual tweets or blog posts to national news items may be reinforcing this perception that social media is a permanent and high stakes space for participation, as may the increasing use of social media policies and guidelines in the professional workplace (e.g. IBM 2005, 2008, 2010, BBC 2010 and 2012b, University of Essex 2012, Osborne 2012b),

Discomfort with public correction is clearly not limited to concerns around permanence or surveillance though. A number of participants reported their own steering and correction behaviours in ways that indicated the empathetic nature of concerns around public correction. For instance James describes his provocations to test the mood and expertise of his network of peers:

> *James: Actually sometimes I pose questions or assumptions I know are wrong just to see how the crowdsource reaction goes. But it can be a occasionally a bit alarming to be told you're wrong, especially if the teller is lacking in charm and diplomacy*

Despite encouraging debate and disagreement James also voices his discomfort with public correction. This is also reflected in Abby's response to being asked if she had ever offered advice to steer or correct a peer:

> *Abby: yes, I did, and they indicated agreement - but I felt badly and wondered if they felt i was being mean*

This empathetic concern for reputation of both the individual and their organisation was strongly and repeatedly voiced. Many participants reported that their solution to avoiding damaging a peer's reputation, standing, or pride, was to provide a correction or steer, related to a public comment, in a private space such as an email or a Direct Message[1].

Acts of private correction are a sensitive solution to the risk of loss of face or reputation, but they create challenging issues. If misunderstandings or errors are made in public but corrections or steers are being made in private then, whilst a constructive learning experience does take place for the individuals privy to the private exchange, there is a risk that others present in the public space may not benefit from that steer or correction. This is particularly problematic as many participants in this research – and indeed many privacy campaigners - see social media as a relatively permanent medium. This means that traces of learning exchanges and discussions may remain public and accessible in the long term, but the version of record may be left in an inaccurate or problematic state due to the absence of additional private steers, correction or advice that informed the original exchanges.

Social media has a reputation, although disputed (e.g. Gladwell 2010), as a more transparent and democratised space for discourse but fears of being publicly corrected – whether at the time of posting or at a later date – and the practice of private correction denies much of the potential for vicarious learning, for further peer support or for peer review of the information shared. Whilst a publicly posted comment may be responded to or debated a private response cannot be scrutinised in the same way.

4. Conclusions

Participants describe learning processes that are often centered around information objects and virtual gifts of information or advice, and they describe discussion and both positive and negative impacts of peer support and intervention.

The issue of private corrections in social media raises complex issues around the construction of over-sanitised presentations of self, notions of trust and privacy online, and the impact of personal practice on community

wellbeing. Social media offers unique opportunities for informal and vicarious learning, which may be compromised by emergent practices around scaffolding in the types of informal CPD learning discussed here.

4.1 Areas for Further Research

Serendipitous learning and scaffolding moments require further examination.

Social media is a powerful source of information, for maintaining weak, strong or new connections. It is also an infrastructure for using and building upon connections with shared interests. Prompts, steers, corrections and similar opportunities do occur but their origins can be anarchic and, as such, quality may vary. There also appear to be stronger opportunities within social media for individuals' sense of confidence and identity to be threatened through dysfunctional peer behaviours. Further work that examines the qualities of both productive and dysfunctional exchanges may be beneficial for shaping future social media policy and professional best practice.

A learner-led form of on-demand scaffolding is emerging but it is not clear how reliable or robust this is in practice.

In many cases participants reported identifying their own learning needs, identifying themselves as being in a Zone of Proximal Development (Vygotsky 1978), and looking to the network for support in learning further. This on-demand form of scaffolding is an extension of Vygotsky's original vision. Here the learner must be sufficiently self-aware and motivated enough to be, on some level, aware that they are in a zone of proximal development, to share their interest, and only then may they receive useful steers, correction, support to learn beyond their current knowledge.

It is less clear how a learner may be scaffolded if they are not aware of their own need for correction or advice; nor how one may interpret the requests that go unanswered. Further analysis, both through ethnographic and more systematic actor-network analysis, is required to better understand these learning processes.

Scaffolding that does occur appears to be associated with complex blurrings of roles and expertise - perhaps definable as the "Wikipedia effect" since knowledge on a small topic can (however briefly) raise the individual to the level of expert. A peer or self-selecting instructor in these spaces need only know enough on the right topics to offer useful scaffolding and support. They do not need a broader body of knowledge as the complex array of strong, weak and potential ties in the network provide many opportunities to receive expertise on a wider number of topics and at a range of levels. The system therefore seems to be one of self-advertising learners benefitting from on-demand scaffolding by their peers, mentors, and notable others in their field. Further understanding of these behaviours, particularly what motivates those who do support peers in these spaces, would be beneficial.

Etiquette around CPD and social media and assessments of trust need to be better understood.

Emerging etiquette in social media spaces, as reported by participants in this research, appears to include an "err in public, be corrected in private" model, which is potentially threatening to productive learning encounters and scaffolding moments. Such semi-public exchanges reflect the weight attributed to reputation in social media spaces. For individuals willing to share corrections - and with an audience sympathetic to dialogue – these exchanges can have positive impacts on an individual's authority as a source of trustworthy information. For individuals unwilling to be corrected, or share corrections, this has the potential to harm reputation. Further exploration of these emerging practices around public and private correction would contribute to better understanding the current and future potential - and limitations - for learning in social media spaces.

Formal markers of trust or influence, such as social media metrics (e.g. number of followers, Klout score), do not appear to be in use by participants in this research. Assessments of trust are instead made against pragmatic criteria, often related to the quality of information or advice shared, attitude, or other highly personal perceptions of value. Further investigation of the relationship between these human trust markers and automatically assessed trust or influence metrics would provide a valuable insight into methods of assessing new contacts and information in social media.

Social media is perceived by many participants to be permanent, an "on the record" exchange, usually in public.

This makes it a high stakes space, particularly for learning. "Permanence" is both a potential benefit (information may be revisited, definitive positions may be found) and a threat, particularly where potentially controversial opinion in concerned, or where inaccurate, incorrect or out of date information could be seen and associated with the individual and their professional reputation. Analysis of existing research on generational attitudes to technology, social media and the authority of print, which could be developed into a more nuanced understanding of what "permanence" means for learning and observed exchanges in a predominantly text-based environment, would be highly beneficial.

4.2 Recommendations for operationalising this research

Throughout this research I have explored current CPD practice within social media. The findings suggest specific practical opportunities for organisations and individuals to develop their practice:

1. Formally recognise the value of social media as an arena for CPD and professional learning. This would benefit individuals and organisations by emphasising forms of valued social media participation and providing lower risk opportunities for engaging with best practice.

2. Encourage or adopt self-aware efforts to seek support and scaffolding. For instance reviewing and reflecting upon calls for help on Twitter might be a more personalised and appropriate method of identifying CPD needs for an individual than conventional practices.

3. Embrace a culture of accepting error and correction. Making corrections and steers in public rather than in private has huge benefits for the learner, scaffold provider, and vicarious learners, and ensures the public version of record retains interest and relevance. Public correction may also help encourage deeper reflection and discussion and demonstrate transparency and openness.

4. Reevaluate the relative impact of "permanence" in the online world and consider techniques to manage perceived risk. For instance a statement of relevance, date published, and perhaps a suggested "best before" date would help later readers of a comment to assess it within an appropriate context.

In conclusion it is important that employers and individuals recognise and understand the growing role of social media in continuing professional development practices, no matter how they choose to do so.

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The Using of Social Media Platform in Modern Journalism Education

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Abstract: The usage of social media platform, especially Facebook, is increasing daily in higher educational system. The purpose of this paper is to present the role of social media in modern Georgian journalism education (Case of I. Javakhishvili Tbilisi State University) and to determine how effective the usage of social media and e-learning as an educational tool during the journalism studies is. This study examines students' attitudes towards using two online platforms - Moodle and Facebook. Quantitative method - survey among journalism students was used as a research method (n=121). The survey showed that Facebook's closed groups are more popular among students than MOODLE platform and social media is very popular as a supplementary instrument during the learning and teaching process.

Keywords: Social Media, Blended Learning, Facebook, e-learning, Moodle, Journalism Education, Computer-mediated Communication

1. Introduction

The usage of social media platform is increasing daily in higher educational system. Online platforms, as social media tools as well as e-learning methods are actively being used especially, in journalism education. Based on knowledge management, modern journalism education cannot be imagined without digital technologies and it can be stated that the role of E-learning is of immeasurable - importance. Though, of course, it does not replace traditional learning, it only diversifies and perfects teaching processes (Osepashvili, D. 2010); "Technology should not and will never replace education, but assist educational practice, improve teaching efficiency, and enhance student learning experiences" (Liu,Y., 2010,).
Technologies are mediators between students and lecturers.

"ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment" (Tinio, 2003).

Computer-mediated learning has already been implemented at TSU (I. Javakhishvili Tbilisi State University. MOODLE platform was launched 5 years ago (Spring Semester 2009) and some journalism courses were prepared on this platform e-learning.tsu.ge. But over the last 2-3 years Facebook as an informal and supplementary educational tool became popular among students and teachers. There are a lot of journalism courses which have special Facebook groups. I am one of the pioneers who used MOODLE at TSU and at present beside this, I am using social media in teaching processes, especially Facebook because students require this.

The purpose of this paper is to present the role of social media in modern Georgian journalism education on the example of Tbilisi State University. This aim is interesting parallels of using LMS in teaching and learning processes. Accordingly, this study examines student's attitudes towards using two online platforms - Moodle and Facebook in order to determine how effective the usage of social media and e-learning as an educational tool during the journalism studies is.

In the next part of this paper literature review, research questions and hypothesis will be presented. Then research method will be described and main research findings will be presented. In the final part discussions and conclusions of this research will be given.

2. Literature Review

Facebook, which is a popular social network site, is the most commonly used. It was founded by Harvard students, by Mark Zuckerberg and his friends in 2004. The purpose of Facebook was to allow university students to create and maintain social ties which were relevant to the university experience (Ross et al. 2009; Dogruer et al, 2011, etc).

According to Voorn, R.J. and Kommers, P., the potential of social media as a facilitating tool to achieve high level learning results was presented in literature and was further recognised in a UNESCO policy document (Voorn, and Kommers,, 2013; Kommers, 2011).

There are various studies in recent years, which consider social media as an informal educational tool in higher educational system. Especially Facebook is the object of such studies because of the popularity of this social network in the world.

Why do students use Facebook? What is the motivation for using it? – This topic is discussed in some researches (Ross, et al, 2009; Dogruer, N., et al, 2011; Cheung, Ch., Chiu, P. Lee, M, 2011; Deng, L. Tavares, N. 2013; Petyrovich. N. et al.2014; etc). Such aspects as social communication (maintaining interpersonal relationships and social enhancement), information exchange, and entertainment value all appear to be significant motivations for Facebook users (Hurt et al. 2012; Cheung, Chiu, & Lee, 2010; Madge et al. 2009; etc.). Facebook provided an excellent platform to run a hybrid inperson/online courses (LaRue, 2012). According to Liu:

> *"There are mainly two ways to use of social media tools for educational purpose. One way is to integrate social media tools into the current educational system as a teaching and learning resource to assist the process of curriculum delivery... Another way is to use social media as a parallel learning channel to compliment current curriculum delivery and to extend the learning environment..." (Liu, Y.2010).*

As other researchers mentioned, despite a lot of discussions in recent years, questions related to the role of social and new media technologies in teaching and learning still remain. (Hurt, N. Moss, 2012).

Researchers mention positive, as well as negative sides of using Facebook in higher education. Using of Facebook has many advantages in higher educational system. Most students agree that the advantages are: it's convenient, easy to use, instant interaction is possible. The only disadvantage is that it's too open to public (Saikaew, Krutkam and et al, 2011). Other researchers mentioned other disadvantages. Facebook as a distractive is discussed in some research (Madge et al, 2009; Wise et al, 2011 etc.). Facebook cannot compete with other CMS in grading, assignment uploading and online testing (Loving, and Ochoa, 2011). Some researchers found out that the users of "Facebook" had significantly lower GPAs (Kirschner and Karpinski, 2010).

Facebook is so actively used that it can be said, that it competes with e-learning tools, such a Blackboard; MOODLE and other LMS (Learning Management System) platforms. There are some comparative studies on this topic. For example, Facebook & Blackboard (Parslow, P., 2008); The Portuguese researchers studied MOODLE & Facebook (Patrao, C., Figueredo, A. 2011; Petrovich, N., Jeremic, V., et al, 2013; Petrovich, N., Jeremic, V., et al, 2014; Deng. L., Tavares, J.,. 2013) etc.

In addition, compared with Facebook – which is an effective tool for students to discuss with each other about their learning, CMS (course management system like Blackboard, Moodle etc.) is more directly involved in the learning process, providing an online learning environment that allows an instructor to post course content on the Web (Madge et al., 2009; Mendez et al., 2014).

This study is an attempt to compare the usage of MOODLE and. Facebook in journalism educational system of Georgia, for example, at Tbilisi State University.

3. Research Hypotheses

Although TSU has MOODLE platform and some journalism courses are based on this platform, Facebook groups are more popular among students.

4. Research Questions

RQ1. How frequently Moodle platform and Facebook groups in journalism and mass communication study courses are used?

RQ2. What kind of activities of Facebook and Moodle courses are used during journalism and mass communication teaching process?

RQ3. Which is more popular among journalism and mass communication students of TSU – e-learning platform on Moodle or Facebook groups?

5. Methods

5.1 Data collection

This study aims to determine and compare how effective the usage of social media and e-learning as an educational tool during the journalism studies is. This paper examines student's attitudes towards using two online platforms - Moodle and Facebook. Quantitative method - survey among journalism students was used as a research method.

5.2 Instrument

An electronic survey was conducted in March, 2014 among journalism and mass communication department students at TSU (I. Javakhishvili Tbilisi State University). The questionnaire included closed, multiple choice questions as well as open ended questions.

The questionnaire consisted of 3 parts. The first part referred to Facebook usage; the second – Moodle platform usage and the third – demographical data of respondents (see Appendix). The first and as second part had included the same 10 questions.

5.3 Participants

The online survey was created using gmail forms and this web-link (docs.google.com/forms/d/1bOAS1akxGb8FL-OPlEk5WmNYFgz2j9pAg7LaOvNGSpI/viewanalytics) was emailed to 150 students as a personal mail or Facebook message and responses were received from 121 students (n=121). In this survey, 89 BA level, as well as 32 MA level journalism students participated (As a whole there are 600 students in Journalism and Mass Communication department at TSU).

6. Main Findings

Respondents profile: 78 % (n=96) of the questioned respondents were women and 22 % (n=25) men.

Table 1: Gender of respondents:

Female	96	78%
Male	25	22%

Table 2: Study Level of respondents:

70% (n=89) of the questioned respondents were Journalism students BA level and 30% (n=22) MA Students.

BA Students	89	70%
MA Students	32	30%

Table 3: In how many courses do you use MOODLE and Facebook group?

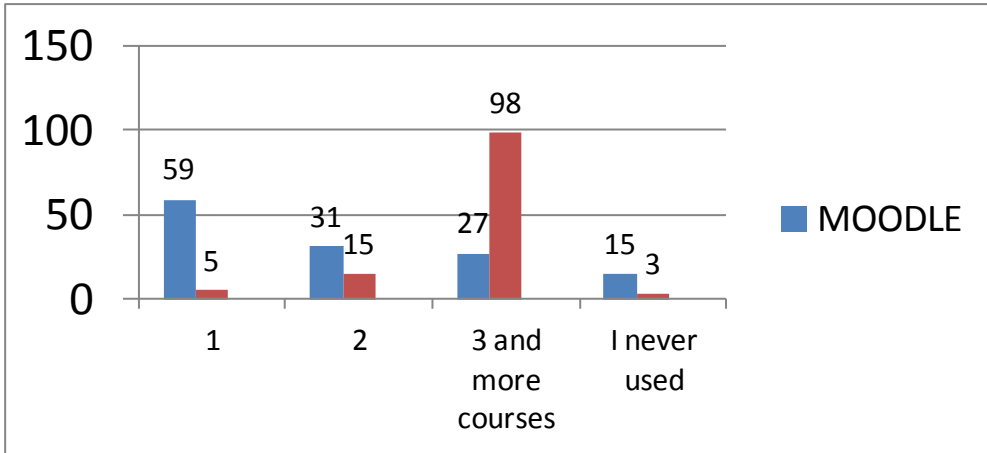| Number of Courses	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
1	59	5	49%	4%
2	31	15	27%	12%
3 and more	16	98	14%	81%
I never used	15	3	12	2%

Figure 1: Number of Courses

Table4: How frequently do you use MOODLE and Facebook for study purpose?

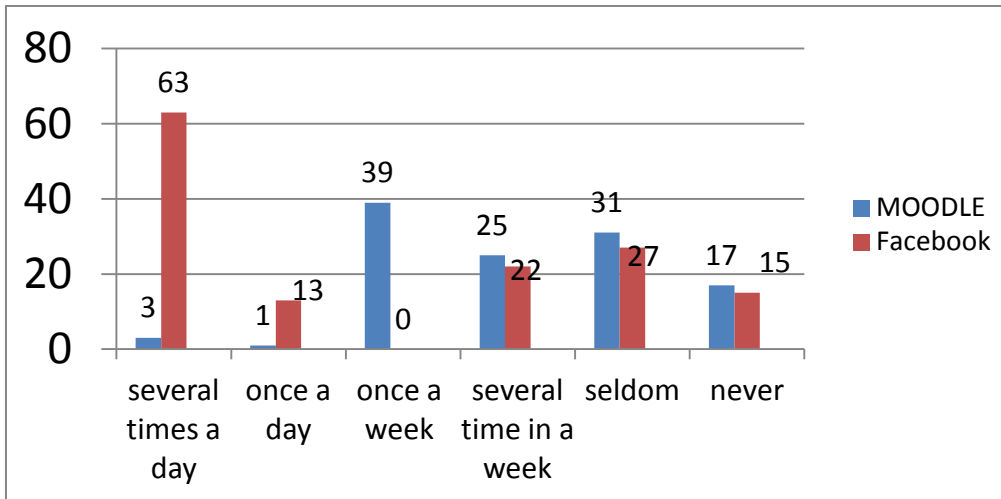| Frequency of Using	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Several times a day	3	63	3%	52%
Once a day	1	13	1%	11%
Once a week	39	0	34%	-
Several times a week	25	40	22%	33%
seldom	31	5	27%	4%
never	17	0	15%	-

Figure 2: Frequency of Using

Table 5: Do you use MOODLE or Facebook group for obtaining information referring to these study courses?

Obtaining information referring to these study courses	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Yes	59	114	51%	96%
No	57	33	49%	4%

Table 6: Do you use MOODLE or Facebook group for uploading home tasks?

Uploading home tasks	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Yes	82	74	71%	63%
No	33	44	29%	37%

Table 7: Do you use discussing forums with course mates or professors for study purpose?

Discussing study forums	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Yes	7	67	6%	57%
No	106	50	94%	43%

Table 8: Do you use MOODLE or Facebook Chat with course mates or professors?

Using the Chat	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Yes	1	100	1%	83%
No	120	21	99%	17%

Table 9: In your opinion, what are the advantages of MOODLE or Facebook as supplementary tools for study purpose?
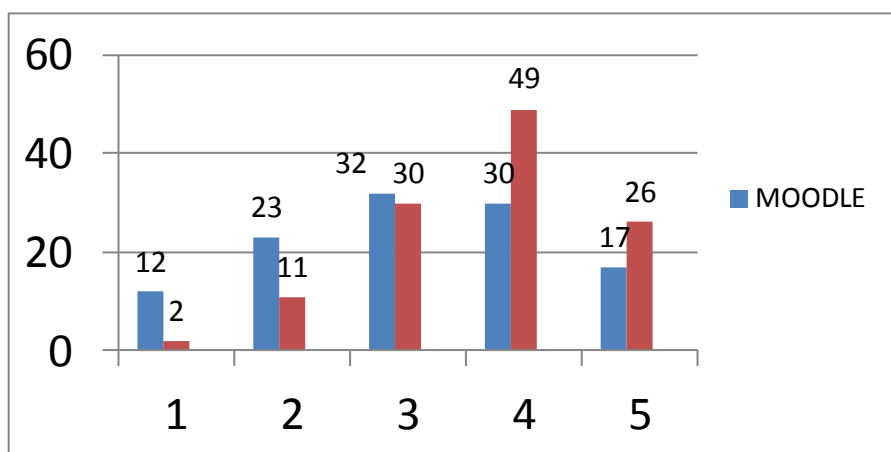
Advantages	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
Possibility of collecting study resources on one platform	77	70	36%	21%
Possibility of uploading home tasks	81	0	38%	-
Possibility of testing	51	0	24%	-
Possibility of discussing forums	0	43	-	13%
Sharing texts, links , photos or videos with others	0	89	-	27%
Interactivity	0	49	-	15%
Reinforcing communication ability	0	50	-	15%
Entertaining	0	18	-	5%
other	5	10	2%	3%

Table 10: In your opinion, what are the disadvantages of MOODLE or Facebook as supplementary tools for study purpose?

Disadvantages	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
It takes a lot of time	-	63		50%
8	-	38		32%
It is less interactive	61	-	43%	-
Does not have the function of sharing	61	-	43%	-
other	21	24	15%	19%

Table 11: In your opinion, how important the usage of MOODLE or Facebook in teaching processes is?

Importance of using MOODLE or Facebook in Education	Number of Respondents		Percentage of Respondents	
	MOODLE	Facebook	MOODLE	Facebook
1	12	2	11%	2%
2	23	11	20%	9%
3	32	30	28%	25%
4	30	49	26%	42%
5	17	26	15%	22%

Figure 3: Importance of using MOODLE or Facebook in Education

7. Discussion

According to the results of this research, the frequency of using Facebook for educational purposes is higher than MOODLE platform. 81 percent of questioned students have 3 and more study courses on a Facebook groups while only 14 percent of respondents have 3 and more study courses on e-learning portal. It may be explained by the fact that most of these Facebook courses have mostly communicational purposes to spread some information about this study subject while the main goal of MOODLE based courses is to upload home tasks, study resources and organize testing. As students mentioned in open ended questions it would be better if professors used academic forums more actively on Facebook groups as well as on Moodle platform.

As for the frequency of using Facebook during the day, 52 percent of respondents use it several times a day and 11 percent, once a day while as a previous research showed, 55 percent of students visited this site at least once a day (Dwyer et al. 2007)

According to this research results, most of the journalism students at TSU think that the usage of Facebook as a supplementary tool for teaching process is more important than e-Learning platform based on MOODLE. The students' assessment should be explained by so called Facebook 'effects': its interactive, communicative, entertaining etc. which are its advantages.

As the questioned students emphasized in open ended questions, Facebook group has a lot of advantages. It's more effective, more convenient, easier to use and a more vivid form because of instant interaction. These groups help them and learning process becomes more interesting and improved.

First of all, they obtain information referring to study courses. 96 percent of questioned student think so; 83 percent of respondents use Facebook chat as a synchronal communication with professors or course mates.

Besides, as students mentioned in additional open ended questions, Facebook is very useful and important, because of its sharing function. Journalism students can share and spread their media products not only among Facebook group member but also via social media.

MOODLE is a less vivid form and almost excludes interactivity. Despite this, MOODLE is as useful tool as social media. MOODLE has its own advantages – as some questioned respondents mentioned in open ended questions, besides testing, home task module and possibility to collect all study recourses together, is more comfortable, because its availability in any time. In some organizations, especially, in state institutions social networking during working hours is forbidden and accordingly, students who are employed there can't have access to Facebook study group.

What are the disadvantages of using social media for educational purpose? As students mentioned in open ended questions, Facebook sometimes distract them from learning processes. As 52 % of questioned students think, it requires a lot of time. They become so addicted to social network that very often during the whole day they even check their Facebook account via mobile phone. But this issue, how frequently students use mobile phones for educational purpose is another topic of our future research.

The limit of this research was only to determine the students' attitudes toward the usage of Facebook and MOODLE platform. For further research it will be interesting to study professors' opinion about this topic too.

Conclusion

Main research hypothesis which has been confirmed is that although TSU has MOODLE platform and some journalism courses are based on this platform, Facebook groups are more popular among students. 81 percent of questioned students have 3 and more study courses on a Facebook groups while only 14 percent of respondents have 3 and more study courses on e-learning portal; 52 percent of respondents use Facebook several times a day while the frequency of Moodle is 3 percent.

According to the results of this research, social media platform, especially, Facebook groups are actively used by journalism and mass communications professors of TSU during the learning process as a supplementary instrument of teaching but in most cases it has communication purpose. As it was revealed by this study, these closed groups are more popular among students than MOODLE platform.

Main finding which was revealed by this research is that the usage of Facebook in journalism education is useful because it gives students an opportunity to share and spreading their media production (videos, newspapers, magazines or some photos or articles) not only Facebok group members but also via social media users.

As previous studies reveal despite the using social network sites in education, CMS (Course management system like of Blackboard, Moodle etc. dominated while according to our research in Georgian case, Facebook dominates.

In my opinion and from my practical experience, despite such popularity of Facebook in modern journalism educational system in Georgia, MOODLE platform is not less useful and valuable compared with social media platforms (because of tests and home modules).

It should not be considered as MOODLE vs. Facebook. They don't exclude each other. Moreover, they complement each other and despite the challenges, it makes learning environment more interesting, more effective and more student-oriented.

As a result of this research some practical recommendations appear:

✓　　Usage of Social media tools are important during the learning and teaching processes of journalism courses but it is desirable to use Facebook not only for communicational but also for collaborative aim. It is especially desirable to use it more actively in practice based subjects;

✓　It would be good if teachers used Moodle platform together with Facebook tools;

✓　It is desirable, to promote using of Moodle among teachers;　because of its academic character it less distractive from learning processes;

✓　It would be better if academic discussions forums were used more actively on Moodle as well as on Facebook groups.

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Appendix

A block:

1. In how many courses do you use Facebook group?:

1

2

3 and more

I never used

2. How frequently do you use Facebook for study purpose?

Several times a day

Once a day

Once a week

Several times a week

Seldom

Never

3. **Do you use Facebook group for obtaining information referring to these study courses?**

Yes

No

4. Do you use Facebook group for uploading home tasks?

Yes

No

5. Do you use discussing forums with course mates or professors for study purpose?

Yes

No

6. Do you use Facebook Chat with course mates or professors?

Yes

No

7. **In your opinion, what are the advantages of Facebook as a supplementary tool for study purpose?**

Possibility of collecting study resources on one platform

Possibility of uploading home tasks:

Possibility of testing:

Possibility of discussing forums;

Sharing texts, links, photos or videos with others;

Interactivity;

Reinforcing communication ability;

Entertaining;

Other.

8.**In your opinion, what are the disadvantages of Facebook as supplementary tools for study purpose?**

It takes a lot of time;

It can be accessible to others;

It is less interactive;

Does not have the function of sharing;

Other

9. In your opinion, how important is to use Facebook in teaching and learning processes?

1

2

3

4

5

10. Would you like to add something?

B block:

1. In how many courses do you use Moodle platform?:

1

2

3 and more

I never used

2. How frequently do you use Moodle platform for study purpose?

Several times a day

Once a day

Once a week

Several times a week

Seldom

Never

3. **Do you use Moodle platform for obtaining information referring to these study courses?**

Yes

No

4. Do you use Moodle platform for uploading home tasks?

Yes

No

5. Do you use discussing forums with course mates or professors for study purpose?

Yes

No

6. Do you use Moodle platforms chat with course mates or professors?

Yes

No

7. **In your opinion, what are the advantages of Moodle platforms as a supplementary tool for study purpose?**

Possibility of collecting study resources on one platform

Possibility of uploading home tasks:

Possibility of testing:

Possibility of discussing forums;

Sharing texts, links, photos or videos with others;

Interactivity;

Reinforcing communication ability;

Entertaining;

Other.

8.**In your opinion, what are the disadvantages of Moodle platforms as supplementary tools for study purpose?**

It takes a lot of time;

It can be accessible to others;

It is less interactive;

Does not have the function of sharing;

Other

9. In your opinion, how important is to use Moodle platforms in teaching and learning processes?

1

2

3

4

5

10. Would you like to add something?

C block:

Level of Study: BA

MA

Gender:

Female

Male

Behavior Patterns for Romanian Users on Facebook

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Abstract: The development of social networks has changed the way in which the consumers behave both online and offline. One of the main changes is the fact that the nowadays life of consumers is determined by their presence on social media networks as for instance they have less time for offline activities as they spend more and more time on social media networks. Besides this many of their offline activities are accompanied by action on social media networks as for instance posting pictures, tags and so on. Another aspect is the communication which takes place much easier on social networks. This article presents the results of a research about the activities of the Romanian user on Facebook. Facebook has become in the past year the number one of social media networks and almost everybody and everything are present on Facebook. Moreover the development of smart phones and the mobile internet has increased even more this trend. The article presents different aspects of the behavior of the Romanian users as for instance the time and sequence of his/her online presence, the main online activities as well as the perception about these aspects. Understanding all these aspects will help companies (including Facebook) to develop their activities so that they can more easily influence the consumers.

1. Introduction

The last decades have been marked by a rapid evolution of user generated content (or social media) on the web. Facebook has become one of the main activities of the young population nowadays. Many of the activities which take place in the everyday life are posted in different ways on Facebook, in pictures, videos, statuses and others. Even the creation of a certain reputation and image, both in the personal and professional life are reflected in a certain way on Facebook. According to Sherry Perlmutter Bowen, a gender and communication professor at Villanova University in Pennsylvania, especially men use social media to gather information and to show their influence, by selling their ideas, by competing with each other and consequently by 'climb the ladder' by their activity on Facebook (Godreau, 2010). Practically, they use social networks as Facebook to broadcast their ideas, knowledge and wisdom (Godreau, 2010). Buy the ideas posted on Facebook and other social media networks, people can show their personality or even more they can create their personality, by exposing their ideas, changing ideas or interacting with people interested in similar topics. Moreover, social media networks allow their users to create a certain status, by posting pictures of their exotic holidays, fancy parties or even show their inclusion in certain social groups. In many cases Facebook can be a much easier way to show and express its personality and everyday life and by this to create a certain personal and professional reputation.

This article presents different ways by which Facebook has influenced the behavior of the population and the results of a research which presents the motives of the Romanian to log on Facebook. It is analyzed if the Romanian population has similar motives to log on and spend their times on Facebook. Besides this it is analyzed how people can create reputation, by their activity on Facebook.

2. Research Coordinates

This article relies on a research which had as purpose to determine the reasons of the Romanian population to log on Facebook and the way they create themselves a certain image. The research was carried out in the period April-May 2011 on 1660 randomly chosen respondents from Romania. The only thing which was taken in consideration was the fact that the number of female respondents should be equal to the number of male respondents. The survey was done with the help of a questionnaire, which contained both questions regarding the motives of logging on Facebook, the behavior of the Romanian consumer on Facebook, the role of games as a loyalty program for Facebook as well as questions regarding the security of information. In the following, there are presented the reasons of using Facebook, depending on gender. The questions regarding the evaluation of different aspects regarding the social network Facebook were Likert scale questions, where 7 meant very important aspect and 1 meant not important at all.

In this article there are analyzed two aspects about the behavior of consumers on Facebook. One analyzed aspect is the motives and the factors which determined the consumer to enter on Facebook. The second aspect is the frequency and the time consumers spend on Facebook. Both aspects were analyzed depending on gender and relationship status.

3. Motives of Entering Facebook

One of the first analyzed aspects are the factors which determined the consumer to register on Facebook. As it can be observed in fig. 1, the main reason for consumer to join Facebook was the curiosity. 54.7% of the women and 52.8% of the men affirm that they register on Facebook because of curiosity. It can be observed that women are more curious than men are. The second most important factor of joining Facebook was keeping in touch with other people. 46.3% of the women and 45.9% of the men joined Facebook because they wanted to be in touch with friends, colleagues or other acquaintances. One of the factors which was more important for men then for women was boredom. 35.7% of the men and 31.4% of the women joined the social network because they had no other activities to do. E-mail invitation is a more attractive factor for women (26.7%) then for men (20.5%). It is interesting that more men joined Facebook (20%) because it is in fashion then women (19.4%) did. Another interesting factor is that more women (14.6%) joined Facebook because of games then men (11.9%). Mass media was one of the least attractive factors to determine people to join Facebook.
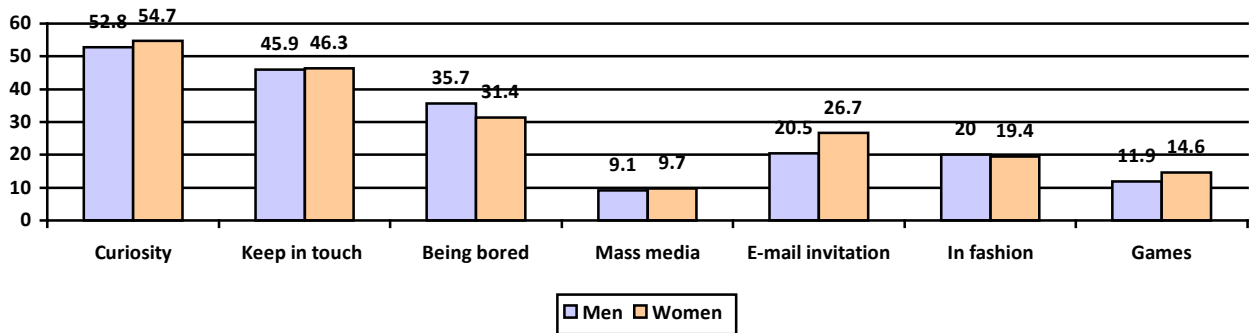

Figure 1. Reasons for registering on Facebook, depending on gender

The more interesting analysis is the reasons of joining Facebook depending on relationship status. As it can be observed in fig. 2, curiosity is a factor which drives more married people to join Facebook than people who are single, in a relationship or divorced. So 65.3% of the married people affirm that they joined Facebook because of curiosity. The values for single people (53.3%) and people who are in a relationship (52.6%) don't differ too much. For the divorced people, only 35.7% joined Facebook because of curiosity. For all categories this is the main reason to have joined Facebook.
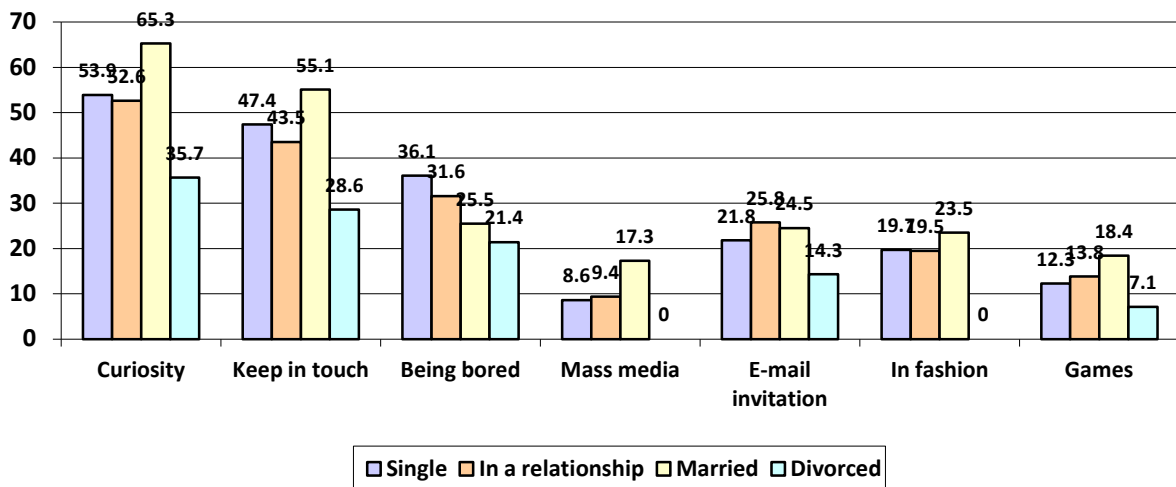

Figure 2. Reasons for registering on Facebook, depending on relationship status

For the reason "keep in touch" again for the married people this is a more important factor than for other categories. So 55.1% of the married people state that they joined Facebook because they wanted to be in touch with other people. More single people (47.4%) affirm that this is also for them a reason to join Facebook than for people who are in a relationship (43.5%). Regarding the motive boredom, most of the single people (36.1%) affirm that this was the reason why they joined Facebook. 31.6% of the people in a relationship, 25.5% of the married people and 21.4% of the divorced people joined Facebook because of boredom. At an e-mail invitation reacted more the people being in a relationship (25.8%) and the married people (24.5%), while only 21.8% of the single people and 14.3% of the divorced people affirmed that they joined Facebook because of this reason. It is interesting to observe that for the other reasons the married people are most responsive. So 23.5% of the married people joined Facebook because it is in Fashion, 18.4% joined Facebook because of games and 17.3% of them joined Facebook because of mass media. For all motives the responsiveness of people in a relationship is a bit higher than for the single people.

To conclude, it can be observed that the motives for joining Facebook are the strongest for married people and stronger for people in a relationship than for single people. Boredom was the only reason which was stronger for single people.

4. Behavior on Facebook

Regarding the frequency of entering Facebook, it can be observed that most of the people enter the social network at least once a day. 58.6% of the women and 52.2% of the men state that they enter Facebook, several times a day. Further 20.6% of the women and 19.4% of the men enter Facebook at least once a day.18.9% of the women and 18.2% of the men visit Facebook at least once a week. Only 6.9% of the women and 2.8% of the men state that they seldom visit it. As it can be observed in figure 3, the women have a higher frequency of visiting Facebook.
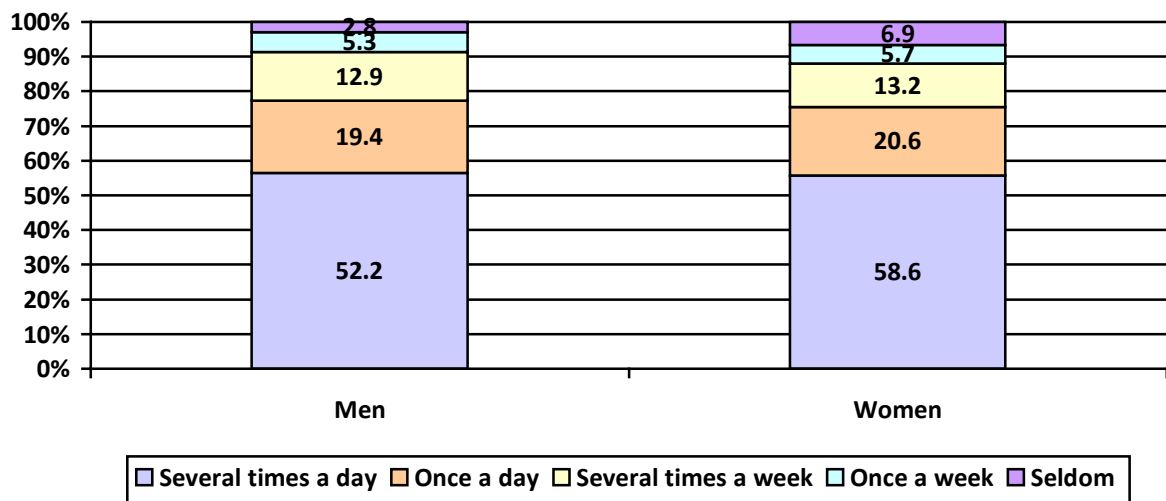

Figure 3. Frequency of registering on Facebook, depending on gender

Depending on the relationship status, it can be observed that the single persons are the ones who visit the social network most frequently. 57.3% of the single persons visit Facebook several times a day, while only 55.5% of the people in a relationship and 50% of the divorced persons have the same behavior. The married people are the ones who don't enter Facebook that frequently, only 39.8% of them mentioning that they enter the social network several times a day. Anyway the almost half of the questioned people visit Facebook several times a day. This percentage is added by the people who visit Facebook at least once a day, reaching cumulated values of 65-80%. So, further 20.3% of the single persons visit Facebook at least once a day, while 25.5% of the married people, 18.9% of the people in a relationship and 14.3% of the divorced people have the same behavior. The married people are the ones who enter Facebook least, so 8.2% of them mention that they visit Facebook seldom, while only 4.8% of the single people and 4.6% of the people in a relationship do so. None of the divorced people said that they visit Facebook seldom, but this can be explained by the smaller number of questioned divorced people.
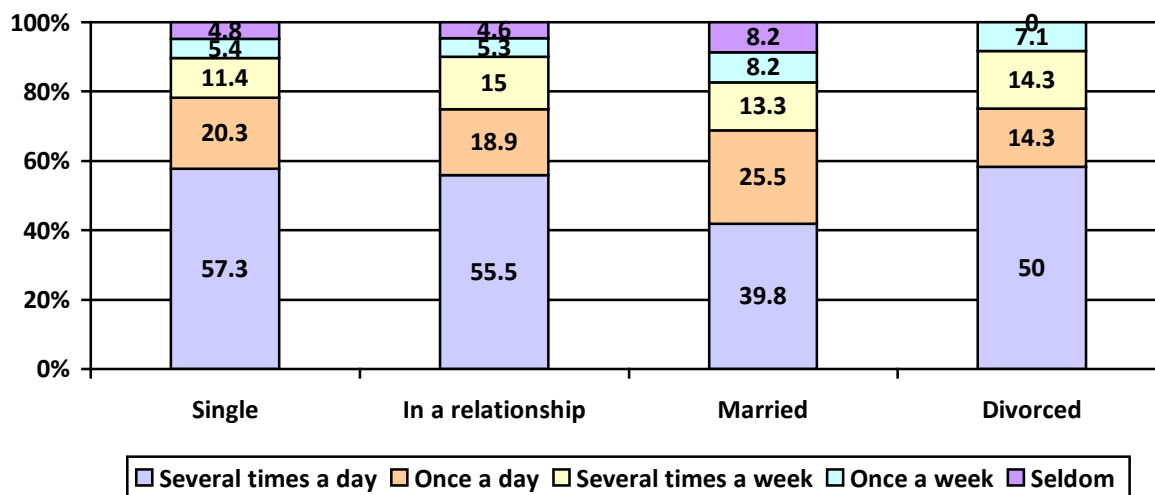
Figure 4. Frequency of registering on Facebook, depending on relationship status

As it can be observed in figure 5, most of the people enter on Facebook in the afternoon, in the evening and in the daytime. As figure 5 shows more women visit Facebook in the afternoon and evening then men do. So, 62.9% of the women mention that they enter Facebook in the afternoon, while only 55.7% of the men do so. For the evening, again the number of women (44.7%) who enter Facebook is higher than for men (40.6%). In opposition to this, the number of men (39%) who visit Facebook in the daytime is higher than for women (33.6%). It is interesting to observe that both for women and men, 16.2% of them visit Facebook at the job or at the university. It is also interesting to observe that more than 17% of the people visit Facebook before eating breakfast and 17% mention that they visit it in the morning before leaving for the job or university.
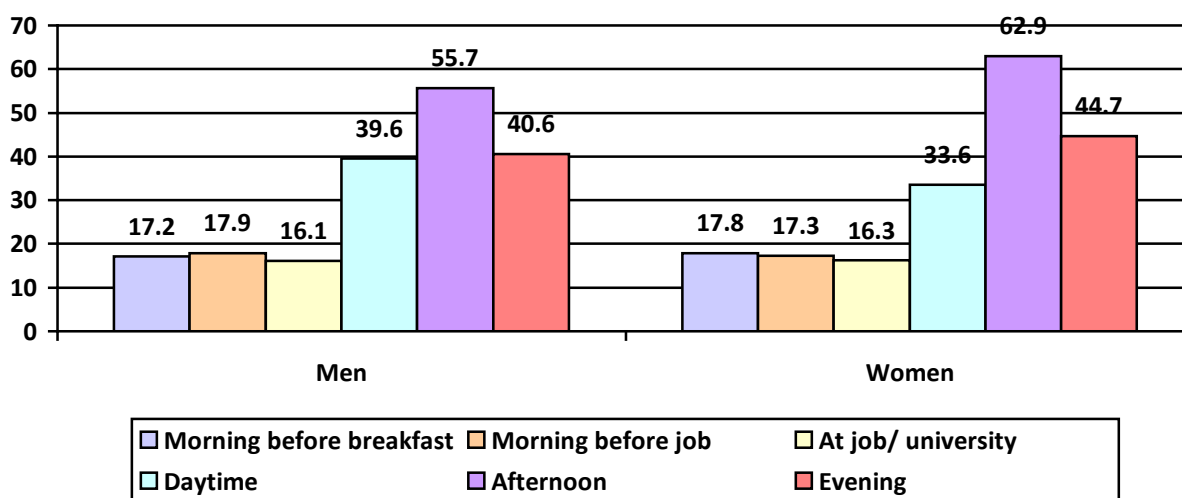
Figure 5. Time of the day when people enter Facebook, depending on gender

Regarding the relationship status, it can be observed that the single people and the ones in a relationship visit Facebook in the afternoon or in the evening, while the married people and the divorced one visit Facebook in the daytime.

As it can be observed in figure 6, 61.6% of the single people enter Facebook in the afternoon and 44.9% in the evening. 36.9% of them enter Facebook in the daytime, while 14.3% do it at work. It is interesting to observe that single people enter Facebook at least at work. 16.4% of the single people enter Facebook in the morning before breakfast, while 17.8% do it in the morning before leaving for their job. For the people in a relationship the percentages are similar, but slightly smaller. So 60.2% of the people in a relationship enter Facebook in the afternoon, while 41.1% do it in the evening. 34.5% of the people being in a relationship enter Facebook in the

daytime, while 17.3% do it from work or university. The percentage of people in a relationship who enters Facebook in the morning is similar to the single ones.

For the married persons the main time when they enter Facebook is in the daytime. 45.9% of them do so. On the next places there is the afternoon (38.8%), the evening (32.7%) and the morning before breakfast (31.6%). It is interesting to observe that the married people are the ones who use most Facebook at work. Divorced people are also entering Facebook in the daytime (50%), in the evening (50%) and in the afternoon (42.9%). They are also the category who uses Facebook most in the morning both before breakfast (28.6%) and also before work (28.6%). 21.4% of the divorced people are also entering Facebook at work.
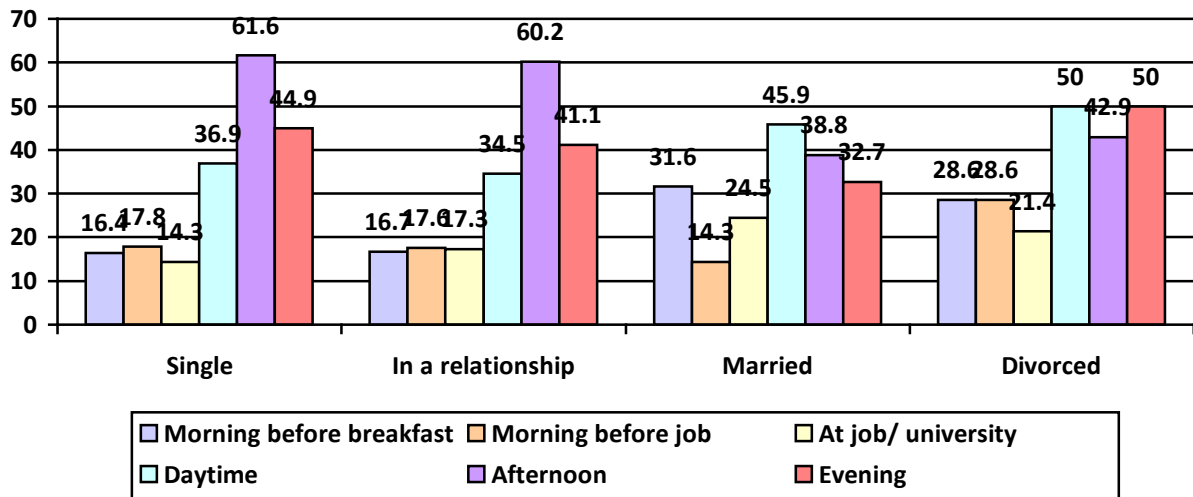

Figure 6. Time of the day when people enter Facebook, depending on relationship status

As it can be observed the relationship status has an influence on the way people behave on Facebook and probably also on the way people behave in general. Married people probably spend more time with their families, so that they enter Facebook more in the daytime, even at work or university. Despite this, they are the ones who are most curious about the activity on Facebook.

5. Conclusions

The results of the research show that the behavior patterns of consumer differ depending on gender and relationship status. Probably the behavior on Facebook is associated and depends on the everyday behavior of consumer. They probably adjust their Facebook behavior depending on the time they spend with their families. This explains why married people enter Facebook more in the daytime, while other in the evening.

The results of the research have an increased importance for the companies, which want to promote their products and services through social media networks. By knowing the type of reason which determined a user to go online, a company can choose how to design its advertisement so that it can reach the target audience. In the same way it is important to find out the frequency and the time of the day when the consumer is online. Based on this a company can increase its activity in the period when its target group is online.

Even though the results of the research present the behavior of the Romanian population, it can be extended on an international level, by making the research in other countries. It would be interesting to analyze the impact of cultural differences on the online behavior. Most of the studies show that in the online world there are not that many differences, as people have learned to use the internet in an era of globalization. Therefore they have started to use online sites in the same way and communicating with another. Of course there are aspects like cultural elements, religion social status and social roles which influence the online behavior, but the differences are not that big as in the off-line life.

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Is There a Role for Social Media in Enhancing Environmental Citizenship? Lessons From a UK Case Study

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Abstract: The paper presents a study focused around the question: "can social media tools be used effectively to foster a participatory process that increases environmental citizenship in non-domestic buildings?". The research tries to understand the role of building users in the socio-technical system that influences an institution's environmental impact. In this context, decisions about environmental performance are imposed too often through a top-down system, which automates environmental conditions. It is alternatively argued that it is an issue of democracy whether building users are given the possibility of controlling the conditions of their workplace. Users need to be not only educated, but also empowered in order to be able to take decisions that would not increase the environmental impact of their institutions. Therefore a participatory process is suggested as the right tool to nurture environmental citizens, who will be able to take 'right' and 'good' decisions. Public participation is today increasingly considered to be an important aspect in the success of behaviour-change processes and this approach is today more feasible thanks to social media tools. Social media has emerged as a worldwide phenomenon with applications like Facebook and Twitter credited with everything from Obama's 2008 election victory, to the Arab Spring. But alongside the grand claims of a social media inspired 'revolution' lie more nuanced questions around the role of digital tools, smartphones, and social media in 'every day' contexts, and whether or not they are facilitating a cultural change or merely adding to the noise of modern life. The paper contributes to the debate through presenting findings from an action research study at an East Midlands University in which the Sustainability team implemented a social media campaign around the theme of environmental citizenship. The campaign was designed with the intent of generating a genuine process of engagement about sustainability and of stimulating the adoption of environmentally significant behaviours.The paper critically reflects on the methodology used, and results from the performed interviews are discussed shedding light on how the claims of social media on participation can be tested, and how best to design interventions for future environmental communication initiatives with citizens.

Keywords: Public engagement, Built environment, Environmental citizenship, Social media, Sustainable development

1. Introduction

The paper presents a study that aims to evaluate the use of social media to create a participatory process that can increase environmental citizenship of users and reduces energy consumption in institutional buildings. The study addresses the need to lower UK Higher Education sector CO_2 emissions. In this scenario, it is indispensable to focus on the built environment, given the fact that the building sector accounts respectively for the 40% and 35% of energy consumption and carbon emissions in Europe (Dascalaki et al. 2010). In this context, research has often focused on technology-based solutions and 'intelligent' buildings (Wood & Newborough 2007; Derek & Clements-Croome 1997) that automatically control the use of resources, taking responsibility away from people. This is in accord with the behaviour-change literature, which has shown how difficult it is to achieve reductions in energy use through the engagement of users (Jackson & Surrey, 2005). However, building occupants are highly responsible for the use of energy and resources. If Janda is right, saying that "*building don`t use energy, people do*" (Janda 2011, p.71); behaviours, especially when collectively exercised, are important in buildings energy use.

It is also important to stress that traditional attempts to change people's attitudes and behaviours have often focused on top-down, information-based processes (Burgess et al. 1998). Research has conversely demonstrated that those approaches have limited impact on behaviours (McKenzie-Mohr 2000; Lorenzoni et al. 2007) and that information alone is inadequate to tackle behaviour-change issues (Owens & Driffill 2008). On the other hand, empowering citizens and giving them the opportunity to participate in decision-making processes has shown the capability to help society to move towards a pro-environmental model (Bull, Petts, & Evans, 2008; J Petts & Brooks, 2006).

The present paper focuses on the importance of the participatory approach, its role in enhancing environmental citizenship and the fact that social media can express and guide this democratic process. The study was conducted in De Montfort University (DMU), a UK university.

2. Environmental citizenship background

2.1 The participatory approach

Public engagement theory has been applied to territorial planning from the 1990s (Petts 2001), but the idea that the lay public should be involved in decision-making processes regarding environmental issues is today widespread (Arnstein, 1969; Few et al., 2006; Thomas Webler, Kastenholz, & Renn, 1995). The innovative contribution of participatory processes is the establishment of a new relationship between expert and lay comprehending; a relationship that encourages learning about distinct viewpoints. The bi-directional process is not only able to make specialised knowledge widely understandable, but also to translate concrete and everyday problems and concerns into an expert dialogue (Petts 2006). Therefore the experience of laypeople is considered precious, expecially in the context of local issues and risk management. The reason for promoting a participatory approach therefore is that this is not only 'the right thing to do', from a democratic point of view, but also that it will guide the process to superior outcomes. Arnstein stated that *"citizen participation is a categorical term for citizen power"* (Arnstein 1969). It is in fact a reorganisation of power that allows the citizens that are currently excluded from the political process to be deliberative. Grounded in Habermasian theories of the `ideal speech situation` and of communicative competence, the principles for public engagement are *fairness, competence, and social learning* (Webler, Kastenholz et al. 1995).

2.2 Environmental citizenship

Today society`s dominant paradigm is anti-environmentalist (Pirages & Ehrlich 1974). Environmentalism is a challenge to our fundamental views about nature and humans relationship. In the traditional concept of citizenship individuals have civil, political, and social rights. The environment is a property (Bell 2005). Environmental citizenship instead recognises the essential role of the ecosystem in providing individuals' basic needs and that humankind's survival depends on the physical environment (Dobson, 2010).

"Environmental citizenship is a personal commitment to learning more about the environment and to taking responsible environmental action. It encourages individuals, communities and organizations to think about the environmental rights and responsibilities we all have as residents of planet Earth. Environmental Citizenship means caring for the Earth" (Environment Canada, 2004 quoted in Bell, 2005). The concept of environmental citizenship involves looking beyond the satisfaction of immediate interests for the safety of the wider community, and being attentive of the needs of future generations. It can be considered as a way of promoting ecological sustainability and environmental justice (Dobson 2010). In this way individuals are not solely consumers, but key players in the making of sustainable development.

2.3 Discourse-based social media

Social media has many different definitions. Kaplan & Haenlein (2010, p.61) define it as *"a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content"*. The concept of social media is deeply grounded on Web 2.0, also called the 'social web', and is intended as a complex of web-applications that facilitate participatory information sharing and collaboration on the Web (Sharma 2009). Many tools are available and many different cultures arise. They can be collaborative projects, such as Wikipedia, or content creation communities, e.g. YouTube or Flickr. Or they can be social networking sites, e.g. Facebook and Twitter, which are text-based communication tools, but also enable users to share media (Kaplan & Haenlein 2010). The latter are the tools used in the presented study, because of the focus on text-based communication and the sharing community that stems from them.

Grand claims have been made in the last decade for social media to be a driving force for a deeper democratisation of society, from the role they played in Obama's election (Cohen 2008), to the Arab Spring (Orr 2011). Moreover, social media have been used by government and institutions to engage the public on various issues (Stewart et al. 2012), including sustainability, and by activists to organise and mobilise protests (Gavin 2010). Researchers recognised the possibility of new media to permit greater participation and to foster a more egalitarian participatory form of citizenship (Flew 2008). Social media are about collaboration and participation between peers; characteristics that strongly link them with participative theory. That is the idea of using social media, especially Facebook and Twitter - defined as 'discourse-based' social media - as a tool to enhance environmental citizenship through a participatory on-line process. In spite of the great potential of

social media, and the big claims imposed upon them, the current research also questions their effective power in changing people's attitudes and behaviour and the fact that participation in on-line processes, such as signing petitions or joining an activist group, can be considered act of citizenship.

3. The case study and the approach

In collaboration with the Sustainability Office at DMU, a Twitter account and a Facebook page were created (SustainableDMU). The accounts were launched prior to the intervention in order to create a significant number of followers and gain attention from DMU staff and students. In parallel the blog '*The Living Lab Iesd'* was started to keep progress of research and to test different approaches.

3.1 An East Midlands University seeking to enhance environmental citizenship

DMU is a city-based University with over 20,000 students built post-1992. The interest in sustainability started with its involvement in Leicester's plan to become the first environment city in 1991, followed by the establishment of the Institute of Energy and Sustainable Development in 1994. A commitment to sustainable development is now embedded within DMU's Strategic Plan. A comprehensive range of activities have been undertaken to meet this strategic aim under the themes of research, teaching, management, community engagement, and health and well-being. As a result DMU has seen a rise in the People and Planet's Green League and been highlighted for its best practice in carbon management.

3.2 The intervention: a social media participatory campaign

The social media campaign was intended as a two-way process; Twitter and Facebook were used with the double intention of providing information to DMU users (because without knowledge, actions cannot take place (Wolf 2011)), but also of nurturing a participation process, in the sense that people would have a public, albeit virtual, place to talk about sustainability, to exchange ideas, and to indicate to the sustainability office any concerns or inefficiencies around the university.

To boost environmental citizenship, different messages were communicated. Themes arose from the theory. According to empirical studies (Wolf et al. 2009; Jagers 2009) the environmental citizens: (1) know about climate change and are positive about the role of human beings in causing it; (2) feel a sense of responsibility to reduce their emissions, understand the impact that their actions have on the environment; (3) are willing to act to respond to this sense of responsibility; and (4) are active citizens, in the sense that they participate in their community or are part of humanitarian or environmental organisations. Table 1 delineates the thematic calendar of intervention, organised in weeks.

Table 1. Topic calendar of social media campaign.

1.10 - 7.10	8.10 - 14.10	15.10 - 22.10	22.10 - 28.10
Climate change: The global consequences	Climate change: The local consequences	Light and electricity	Heating systems
29.10 - 4.11	5.11 - 11.11	12.11 - 18.11	19.11 - 25.11
Sustainable Food choices	Sustainable Travel choices	Sustainable Water use	Sustainable Waste and resources management

3.3 After intervention. Evaluating the effectiveness of the social media campaign

Social media monitoring is a relatively young 'science', initially adopted by public relations and advertising agencies (Barker et al. 2012). It is defined as the activity of observing and tracking content on the social web. Each activity on social media has an outcome, or *effect,* which can be measured by observing and then quantifying specific behaviours on social media channels (ibid.). Effects can be: re-tweets, mentions, favourites, follows, likes, shares, comments, sentiment. However, what is central in the evaluation of the campaign is not only a quantitative analysis of the data downloaded during the campaign itself, but the qualitative analysis of the discussion created.

For this reason, thirty-two interviews were conducted at the end of the campaign. A Tweet and post were published on Twitter and Facebook on the 23rd of November 2012, the last day of campaign (see Figure 1).
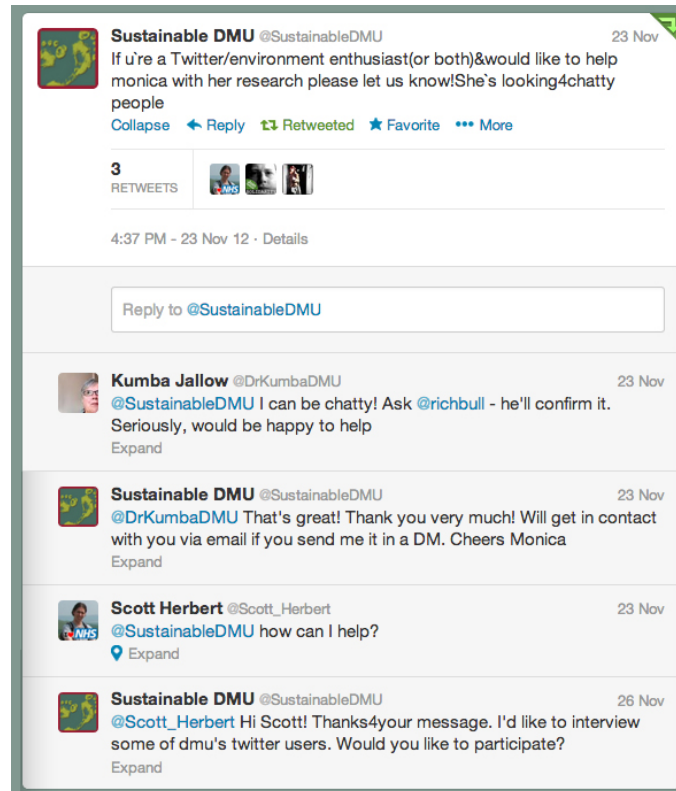
igure 1. Tweet ending the campaign and recruiting participants for interviews.

The majority of the interviewees were recruited through this, others were found through a snowball sampling among online and offline friends and colleagues of recruited participants.

Driven by the objectives of the thesis, the aim of the interviews was to discover people's perceptions of the campaign and views on its effectiveness, to understand participants' use of social media and the impact on their lives, how they viewed sustainability at DMU and how important environmental issues were for them. For the use of the present paper, the links between social media and environmental citizenship will be investigated and presented.

4. Results and discussion

In order to identify 'beyond the process' learning that can translate public engagement into environmental citizenship, the challenge was to inspect the words of 'ordinary' citizens and acquire an understanding of the impact that participation had on them. Therefore the key question that we are going to discuss in the present session is related to the experienced impact of the campaign on participants.

4.1 The interviewees on a ladder; environmental and digital citizenship

Key questions during the interviews related to whether the engagement process on social media has led to an increased understanding of the performance of environmental sustainability in the institution and to a greater appreciation of participants' own responsibilities.

Moreover, it was necessary to consider whether different factors can influence the outcome for the different participants; two key factors have been considered (1) people's digital literacy, i.e. digital citizenship (presented in Figure 2), which could influence the way people see the digital tools; (2) people's environmental attitudes, i.e. environmental citizenship (presented in Figure 3), as to ascertain if people already very aware and active about the issue of environmental sustainability would learn differently to people with lower level of engagement.
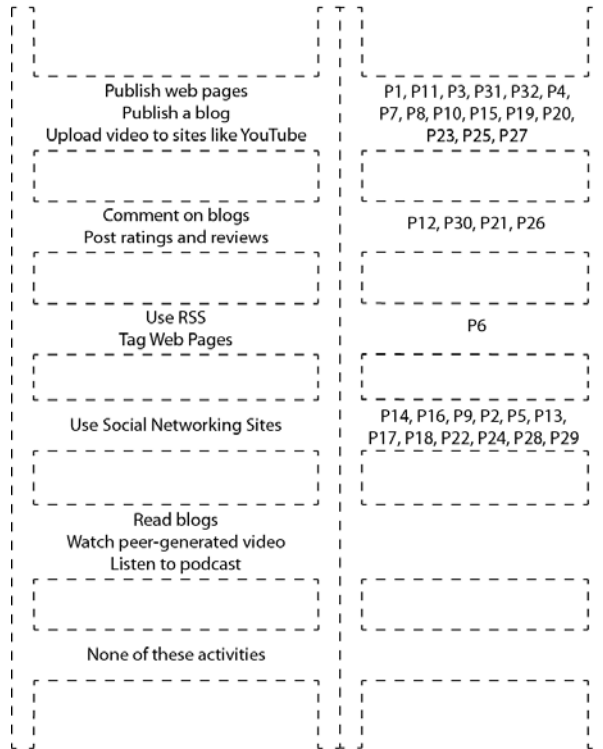
Figure 2. The distribution of interviewees following the ladder of e-participation design by Ferro and Molinari (2010)
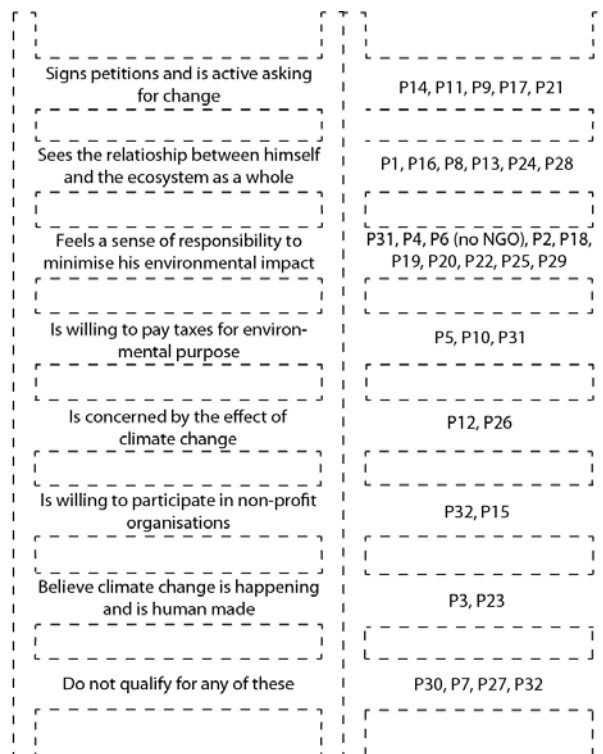
Figure 3. The distribution of interviewees following the ladder of environmental citizenship design by myself

It is visible from Figure 2 that participants share high levels of e-participation; this is not surprising as the base level was the use of social networking sites and the process was happening on social media. People on this rung of the ladder are defined as 'joiners' and it is a very low level of engagement. However, the interviewees are, in the majority, higher consumers of content on the Internet and there are many cases in which they are creators of content as well-many of them fit in the highest rung of the ladder.

Figure 3 presents interviewees on a ladder of environmental citizenship. Only a few of them do not consider themselves to be environmental citizens. Their views however are highly relevant as they instead are very active digital citizens; being on the top of the ladder they are the ones that are most likely to be influenced by information posted on social media. However, their environmental 'attitudes' might make them resistant to change in this context. As it is evident from Figure 3 however most of the interviewees fit in the top *three* rungs of the ladder, supporting the idea that the people most interested in interacting with SustainableDMU are like-minded people and already interested in the topic of sustainability. It is easier to get their attention because they are very likely to be looking for that kind of information on social media; on the other hand, the information posted might have a lower impact on them, because they are already highly skilled environmental citizens.

Hence, it will be very insightful to see if some of the participants have been more influenced than others by the campaign.

4.2 How did the campaign help participants in becoming better environmental citizens?

When asked how the campaign helped them become more aware of their environmental impact and therefore in being better environmental citizens, participants reported different answers.
Some of them reported changing some behaviours as a consequence.

> P3. *"I wouldn't have bought a bike… you were tweeting about getting a free bike lock. So I thought I can actually have a bike to come on campus. So I bought a bike! If I have to be honest I would have never thought of getting a bike, if I haven't seen it on Twitter."*

The same participant reported another occasion in which she changed her behaviour:

> P3. *"The same with the #lug-a-mug, the travel mug, I got one of them as well. I saw a picture, where there was a girl with it, and I thought I am so getting one of them. And now I am using it all the time. I have three of the big ones a day, and I didn't even use to go and recycle my cup. So I thought 'Oh my Gosh, how much waste I am creating.' So I got one of those."*

What is even more interesting about this citation is that not only did she think of starting to use the reusable mug, but that she became aware of the amount of waste she was making, and that was the reason she decided to take responsibility. If we look at environmental citizenship level of P3 we can see that she sits on the very lower level of the ladder; therefore the campaign did help her to change some behaviours, but did not change the way she prioritises sustainability.

Another, and very different, participant mentioned the #lug-a-mug scheme as something that changed her behaviour:

> P9. *"I am thinking about taking your cup. That information it was something that I firstly see it on Facebook and it did change me. Most of the things that came through that SustainableDMU were things that I did anyway, so I guess sometimes I am influenced by what I read."*

P9 scores very high on the ladder of environmental citizenship; however the information she found on Facebook helped her in being an even better environmental citizen; in this case she took advantage of the information she found on SustainableDMU Page. Again, the account did not change her mind about sustainability (fortunately), but helped her be a better environmental citizen.

Another participant mentioned changing her behaviours because of the campaign; as presented in the quote below, P26 mentioned changing her eating behaviours because of the information posted on SustainableDMU:

> P26. *"Because I learned that by eating in a different way I could change my CO2 emissions. What it changed is that I started buying more organic food and I started to look for seasonal food, and started thinking a bit more about what I eat, how I eat it and what I should do."*

P26 is in the middle of the ladder of environmental citizenship. She stated that she started thinking about the implication of her behaviours related to the food she is eating; therefore SustainableDMU did not only change a particular behaviour, but it made her re-consider her actions.

Other participants asserted that the campaign reinforced pro-environmental decisions they have already made. The first reported example relates again to behaviours connected with eating habits.

> *P24. Mainly it was during the week you were tweeting about sustainable and local food, and I think it did made me think more about… and started to consider, and actually trying to buy local food and started eating less meat. I came to appreciate vegetarian food a lot more, I think it's because I come to understand how much I can do.*

> *I think following the Facebook helped reminding me for that initial phase. I think it's very hard to change a habit for the first few weeks; after two or three weeks it became more a second nature. The conversation was reinforcing why I should change that behaviour*

P24 scores very high in the environmental citizenship ladder; however there is a place of improvement and he reported that the campaign helped him in finally making the step between the decision of eating less meat and the actual behaviour; another time, SustainableDMU did not help in changing his mind about it, but helped him in changing the behaviour.

The same was reported by P28 regarding the issue of electricity:

> *P28. "That thing with trying to boil as much water as you need, no more in the kettle. I've done it before, but when I've seen that I said: 'Actually, I'll stick with that'. It was like… not a complete change, but that's a thing I'll remember because I've seen it there. "*

Hence social media can be useful in reminding people to be good environmental citizens, which might be difficult to individually do, particularly if we consider that it is easy and cost-effective to repeat messages.
In addition, P1 started to give an explanation for the reason he was influenced by SustainableDMU:

> *P1. "I guess I am open to be influenced by SustainableDMU. There might be a predisposition. If I am already thinking about 'Should I catch the bus or should I use the car?' and SustainableDMU says catching the bus is a good thing it might influence me but I've already made that decision. So I guess I am looking for what might be the next thing."*

In the views of P1, he is open to be influenced because he is already an environmental citizen, hence he is already thinking about sustainability but wants to know what more he can do; a very positive attitude. And it is evident that Twitter and Facebook can help with this, through sending tweets and starting new conversations. This is reinforced by P22 that acknowledge how the information found on SustainableDMU "*stays in the back of your mind after you read it*" and P23 who stated "*I think it's a great way of sort of learning about anything*".

Other interviewees reported that the campaign did not make them change their behaviour, but made them 'think' about their actions and attitudes, which is one of the elements of learning.

> *P18. The discussion we had about diet I think there is probably some truth that might be worth look into. I don't think it's as extreme as the guy was posting, but I think there was a grain of truth in what they were saying, so I've learnt from that. I don't think I've changed behaviour because I think I am doing the behaviour that I believe to be correct and achievable.*

In support of this, P4 reported the possibility that the information posted on social media made people think, as it does for him. In fact there is so much information that one is able to choose if ignoring it, or absorbing it:

> *P4. "Because it is on Twitter it's usually quite easy to absorb, ignore or take on board. There are so many things that are put out there. There are certainly been things that have got me thinking from them…"*

5. Conclusions

Public engagement is today considered a tool capable of transitioning society toward a pro-environmental model. The impact of such processes on participants has been extensively evaluated. However, it is still uncertain the impact that participatory processes facilitated through social media can have on online

contributors. The key question in the present paper has been whether deliberative processes mediated through social media have the capacity of changing people's hearts and minds and of creating better environmental citizens.

The presented results have shown that participants learned new information, thanks to the campaign, and that in some cases this leads them to either reflect on their actions or to change their behaviours towards better environmental citizenship. However, it is also clear that the impact that the intervention had was fairly moderate and circumscribed to certain behaviours.

Nevertheless, it is encouraging that intervention (using participatory action research mediated through social media) can help people to think more about sustainability and therefore can be a tool able to reinforce behaviour and remind people what is expected from environmental citizens; in the words of one of the interviewees :"*SustainableDMU put out little pulses of information, which do remind you 'Don't forget sustainability and here there is another way of looking at it'*". The campaign had the great outcome of showing that sustainability was a priority for the university and that everyone should care and remember about it.

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Alternate Visualisations of the Diffusion of Innovations Framework

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Abstract: The diffusion of innovation framework is a popular model used by researchers to investigate how technology diffuses through a population. this paper considers alternate visualizations of the rogers diffusion of innovations model. using a three dimensional analog of the median and the mean, the spatial median and the geometric center, this paper presents a visualisation of the rogers doi framework. these visualisations were constructed from data collected from a survey of south african civil society organisations that investigated their appropriation of emerging web 2.0 technologies to advance their agendas. the alternate views presented may assist researchers to find deeper meaning and unexpected results from their analyses.

Keywords: Diffusion, Innovation, Web 2.0

1. Innovation

Fichman (2000) describes diffusion as the process by which a technology spreads across a population of organisations, whilst adoption and appropriation are socio-cultural concepts linked to the dialectic relationship between humans and technology (Delney, Timbrell & Chan, 2008). Rogers *et al.,* (2009, p. 420) define innovation as "an idea, practice or object that is perceived as new by potential adopters and is communicated through certain channels over time by members of a social system." Whereas the first manifestation of an idea, product or process is defined as invention, innovation is the first attempt to implement it in a practical situation (Fagerberg, 2006), and to make maximum use of it (Rogers, 2003).

Innovation is the best way for organisations and nations to endure in the highly competitive and globalised world, (Reinert, 2007). Schumpeter (1939) argues that in the absence of technological innovation productivity inevitably decreases but conversely, that technological innovation improves productivity. The Internet is a prime example of a technological innovation that is driving economic growth and productivity by providing a platform for collaboration and interaction, yielding organisations such as such as Google, Amazon, Yahoo!, eBay, Facebook, Twitter, Skype, and YouTube, (Montanari *et al*., 2009).

2. Diffusion of Innovations

Diffusion studies form the basis for a more rigorous approach to theories of social change and have become an extensive part of research in sociology, economics, political science and communication (Wejnert, 2002). Diffusion theory has only recently been applied to the understanding of technological innovation and the role of technology in bringing about social change.

The discussion around diffusion and innovation begins with a detailed discussion of Rogers' Diffusion of Innovations framework. The discussion then describes the diverse variables, concepts and processes that exist within an integrated model of diffusion. The section ends with a discussion of innovation within organisations and summarises some of the criticisms of diffusion theory.

3. Rogers Diffusion of Innovations

Rogers is credited with synthesising all of the prevailing diffusion concepts and describing a unified theory of diffusion (Surry, 1997). The constructs that underpin Rogers' diffusion of innovations are: The Innovation Decision Process, Innovativeness and Adopter Categories, Rate of Adoption and Perceived Attributes of Innovation.

4. The Innovation Decision Process

The Innovation Decision Process takes knowledge of the innovation (knowledge) and forms an attitude towards it (persuasion) leading to a decision to adopt or reject the innovation (decision), resulting in use of the innovation or not, (implementation). This process is iterative with increasing knowledge of the innovation decreasing uncertainty.

5. Innovativeness and Adopter Categories

Innovativeness is the extent to which an innovation is adopted in relation to other potential adopters and is made up of the following categories: innovators, early adopters, early majority, late majority and laggards (Rogers, 2003). When these categories are plotted on a graph a Bell-shaped curve emerges (Figure 1).

Innovators are not risk averse and actively seek information about new. They occupy the first 2.5 percent of the Bell curve, early adopters occupy the next 13.5 percent, the early and late majorities occupy thirty-four percent each, and the laggards occupy the last 2.5 percent to the right of the mean (Rogers, 2003, p. 267-299). This distribution mimics the normal distribution where sixty-eight percent of the data points lie within one standard deviation of the mean, ninety-five percent lies within two standard deviations of the mean and 99.7% within three standard deviations of the mean.

6. Rate of Adoption

The rate of adoption is the relative speed with which members of a social system adopt an innovation. It is based on the time necessary for a certain percentage of a social system to adopt the innovation (Rogers, 2003, p. 267-297).
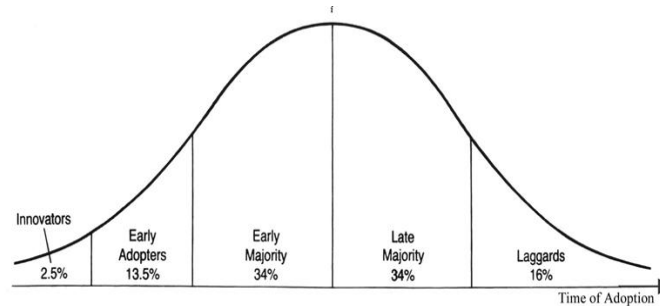
Figure 1: Adoption Bell-Curve (Rogers, 2003)

Most innovation adoptions, when plotted on a graph, results in an S-shaped curve (Figure 2). This S-shaped curve is the same as the cumulative distribution function for the normal distribution, and is just the area under the normal distribution curve.
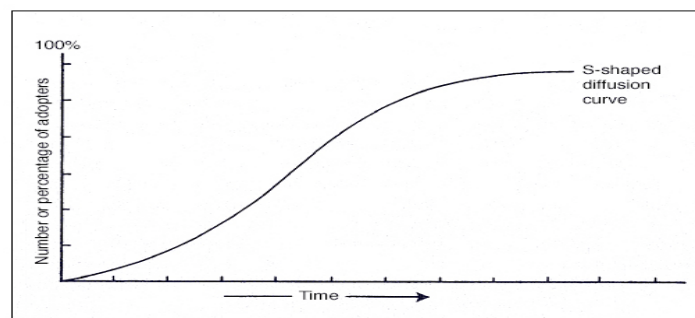
Figure 2: S-shaped Diffusion Curve (Rogers, 2003)

7. Perceived Attributes of Innovations

The choice of whether to adopt or reject an innovation is based on five perceived attributes (Rogers, 2003, p. 219-266):
(1) Relative advantage is the perception of whether an innovation being contemplated is better that the innovation it replaces.
(2) Compatibility is the extent to which the innovation matches the culture, norms, standards and skills of the adopter.

(3) Complexity is the degree of difficulty in understanding and using the innovation.

(4) Trialability, which reduces uncertainty, is the ability to evaluate, test and experiment with an innovation prior to adoption.

(5) Observability states that the likelihood of innovation increases if the results of the adoption are clearly visible.

8. Innovation in Organisations

The innovation process in organisations occurs in five stages under the headings of initiation and implementation.

9. Initiation

The agenda identifies problems, which could be addressed through the adoption of innovations. Effective matching of the innovation to the needs of the organisation is necessary for the sustainability of the innovation and includes anticipating the benefits and barriers.

(1) Agenda setting defines the organisational problem that creates the need for an innovation (Dearing & Rogers, 1996). Performance gaps or discrepancies between expected and actual performance is the motivation for the innovation process.

(2) Matching occurs when the defined problem matches an innovation.

10. Implementation

(1) Redefining/Restructuring occurs when the innovation is changed to closely match the organisation.

(2) Clarification occurs when the innovation is spread widely throughout the organisation with individuals gaining a common understanding of the innovation.

(3) Sustainability occurs when the innovation becomes a routine part of the organisation.

The characteristics of organisational innovativeness are:

(1) Organisation size (+): Larger organisations are generally more innovative (Rogers, 2003).

(2) Centralisation (−): The greater the extent to which power and control is exercised by a small number of people, the less innovative the organisation.

(3) Complexity (+): High-level knowledge and expertise amongst members of an organisation encourages innovation.

(4) Formalisation (−): The greater the bureaucracy in an organisation the lower the innovativeness.

(5) Interconnectedness (+): The more organisational units are linked the easier it is for new ideas to flow, which in turn promotes innovativeness.

(6) Organisational slack (+): Measures the number of resources not actively engaged in meaningful work and is positively related to innovativeness (Rogers, 2003).

Two other organisational characteristics that are important to innovation adoption are:

Champions (+): These are people whose role is to overcome resistance to innovation adoption. Champions were often risk takers and more innovative, Howell & Higgins (1990).

System openness (+): The greater the extent to which members of a system are related to external members, the better the environment for the promotion of innovation adoption.

11. Methodology

To illustrate an alternate visualisation of the DOI theory we have collected data about the knowledge and adoption of Web2.0 services from South African civil society organisations. One thousand seven hundred and twelve organisations were sampled.

12. Adopter Categories Within the Standard Framework

Innovations are adopted over a period of time which - based on when organisations first begin using an innovation – allows them to be classified into 'ideal type' adopter categories. This is what makes comparisons possible. It is important to note that the data can be manipulated to show alternate adoption curves with Rogers (2003, p. 279) arguing for flexibility in adopter categories and advises that when standardising on adopter categories the decision must include (1) the number of adopter categories, (2) the portion of the members under study to be included in each category, and (3) the method, statistical or otherwise, of defining adopter categories. Innovativeness, which is the construct used to describe adopter categories, is defined as the extent to which organisations (or individuals) adopts an innovation earlier than other members of the social system. Innovativeness occurs continuously, and dividing it into separate and distinct categories is

merely a simplification that aids the understanding of behaviour (Rogers, 2003, p. 280). Figure 3 illustrates adoption of each social media service across time for our sample.
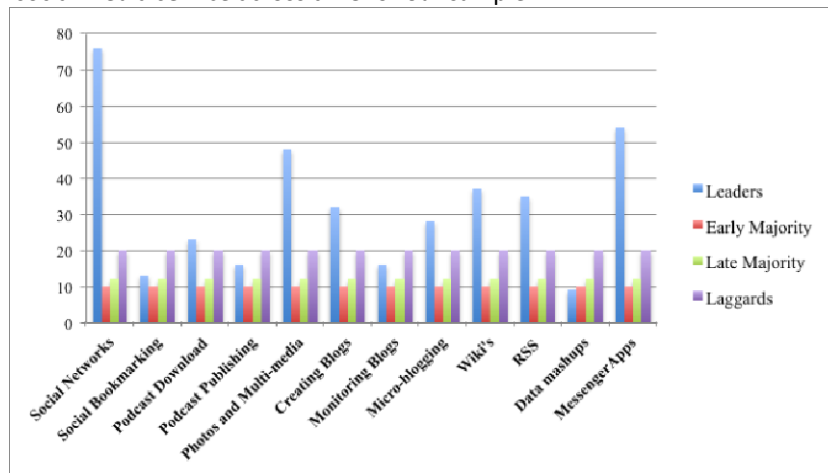
Figure 3: Adoption as per the Diffusion Framework

13. Reproducing the Bell-curve

Here we reproduce the classic diffusion bell-curve by first eliminating all responses that were unsure and then coding the data with numbers one through to four which correspond to the adoption categories of leaders, early majority, late majority and laggards respectively. Because of the short timescales - which may have skewed the data - the analysis allowed for some overlap. For example data up to and including 1.2 (in the coding scheme) was allocated to a leader category. Using this logic for all of the adopter categories leads to the graph as illustrated in Figure 4.
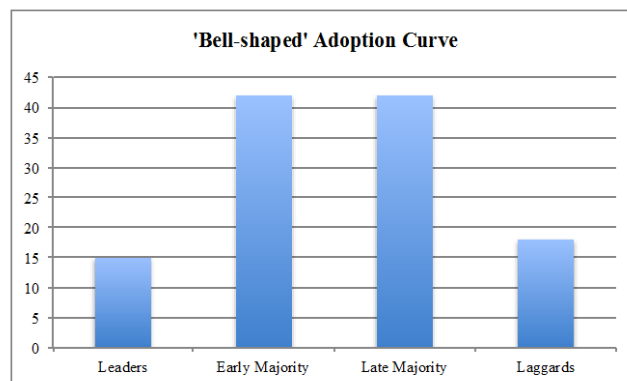
Figure 4: Diffusion Theory Adoption Categories

As can be seen the graph mimics the classic bell-curve of adoption, which illustrates Rogers point that the separation of adoption into categories is merely a conceptual device (Rogers, 2003, p. 280). Alternate descriptions of adopter categories are provided in the next section.

14. An Alternate Visualising of Adoption Categories

We believe that the standard representations of the DOI model do not provide adequate visual impact. In what follows we use the spatial median to illustrate the position of the organisations with respect to adoption categories across three dimensions. We believe that this provides a much richer representation.

The adoption categories have been modified to consist of Leaders, Early and Late Majority and Laggards (each of which corresponds to x, y and z axis respectively). The organisational categories have been modified into the following: advocacy, think-tank, development, non-profit and 'other'. These categorisations ensure that the diagrams presented are visually useful.

Some notes on interpreting the diagram:

1) The size of the circle corresponds to a specific organisation type in the following ascending order: smallest = advocacy, followed by development, think-tank, non-profit and other).
2) The colour of the circle represents a specific social media service as defined by the legend
3) Leaders, Early and Late Majority (also referred to Intermediate) and Laggards are shown along the *x*, *y* and *z*-axes respectively. If a service is close to zero on the *y* and *z* axes, and higher (close to maximum) on the *x* this is an indication of an organisation falling into the 'leader' category
4) The size of the tail hanging off the circles is an illustration of the distance away from *xy*-plane and hence represents the distance along the *z*-axis, and aids in the visualisation of the diagrams.
5) The legend in Figure 6 represents the individual social media services.
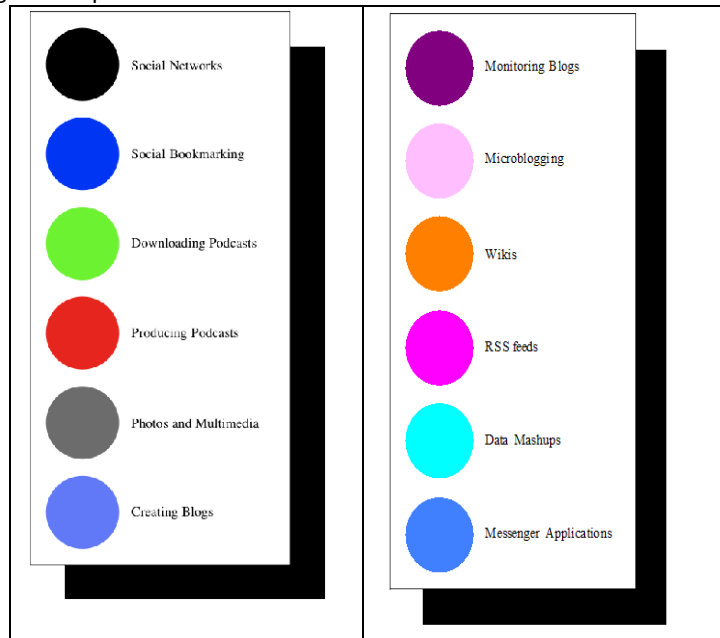
Figure 6: Spatial Median Legend

15. Social Media Adoption Across all Organisational Types

Figure 7 illustrates the adoption of all social media services (social networking, bookmarking etc.) across all organisation types (advocacy, development etc.). It is important to note that the visualisation presented is an active interactive graph in Mathematica, which may be rotated and scaled, for example and which thus presented the reader with a much better view and understanding of the data. As expected there are sixty points on the diagram i.e. twelve services across five organisational types. There is a clustering around the laggard and intermediate categories. This corroborates previous descriptions of adopter categories in this study, which indicate a low adoption of social media services across the organisations surveyed.

It must be borne in mind that civil society organisations span a wide range of structures, goals and agendas; they also have differing levels of engagement with communities, the public, and other organisations and institutions. Influencing national and regional policy is the priority at the macro- and meso-levels, while at the micro-level they work with communities and organisations. The use of technology is particularly significant for engagement with the public, and varies depending on the type of organisations. For example, influencing regional policy would be less dependent on a service like Twitter, while an engagement at a community level where interaction with citizens is paramount may be the prefect vehicle for a service like Twitter.
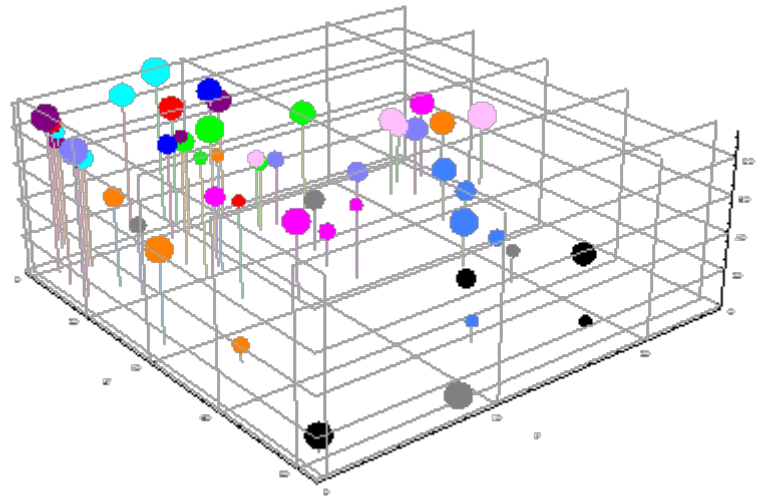
Figure 7: Spatial Median for all social media services across all organisation types

16. Aggregated Social Media Adoption Across all Organisational Types

The following diagrams (Figures 8 and 9) illustrate the adoption categories for the organisational types, advocacy, and development. Clearly similar figures may be presented for the remaining three organisational types.

17. Advocacy Organisations

Figure 8 illustrates adoption categories for Advocacy organisations. There were seventeen organisations in this category.
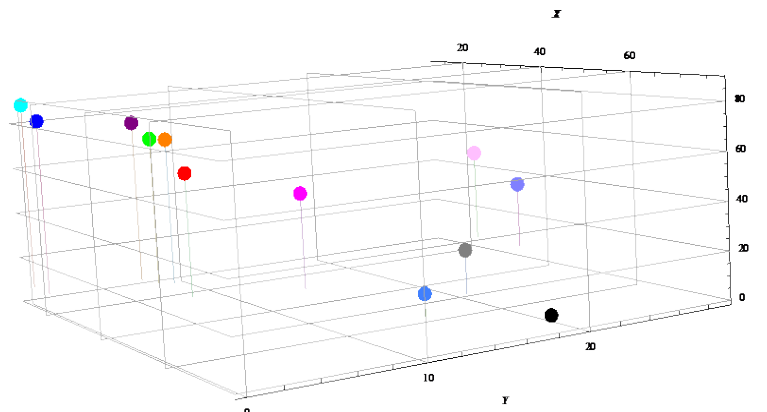
Figure 8: Advocacy Organisations and Adoption Categories

There is a clustering of services (social bookmarking, monitoring of blogs and wikis around the laggard space (high on the z-axis). Social networking, by contrast is in the leader space (high on the x-axis) followed by messenger apps and microblogging. Data mashups is high on the y-axis or intermediate space (which is also called the early and late majority) but leaning towards the leader space. Advocacy organisations have a high-degree of interaction with the public, and with the vast majority of the online population adopting social networking services (Facebook in particular), it makes it necessary for advocacy organisations to adopt this service as well. With the high penetration rates of mobile phones, the same argument for adoption applies to messenger applications, which reside predominantly on mobile platforms.

18. Development Organisations

Figure 9 illustrates adoption categories for Development organisations. There were eleven organisations in this category.
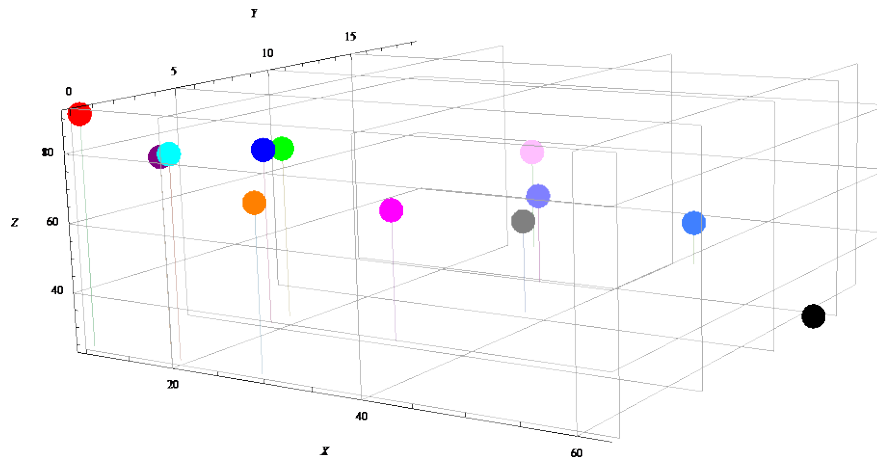
Figure 3: Development Organisations and Adoption Categories

Development organisations appear to have only adopted social networking, this being the only service that lies in the leader space. The other services are clustered either in the intermediate space (e.g. photos and multimedia sharing) or in the laggard space (social bookmarking and wikis). Just like advocacy organisations, development organisations also engage extensively with communities, which makes social networking a necessary medium of communication.

19. The Geometric Center

An associated visualisation of adoption categories is through the use of the geometric center of the distribution. This allows the various categories of the distribution to be represented in an aggregate sense by an average.

Figure 10 illustrates the adoption of the twelve services across the five organisational types. As expected there are sixty data points.
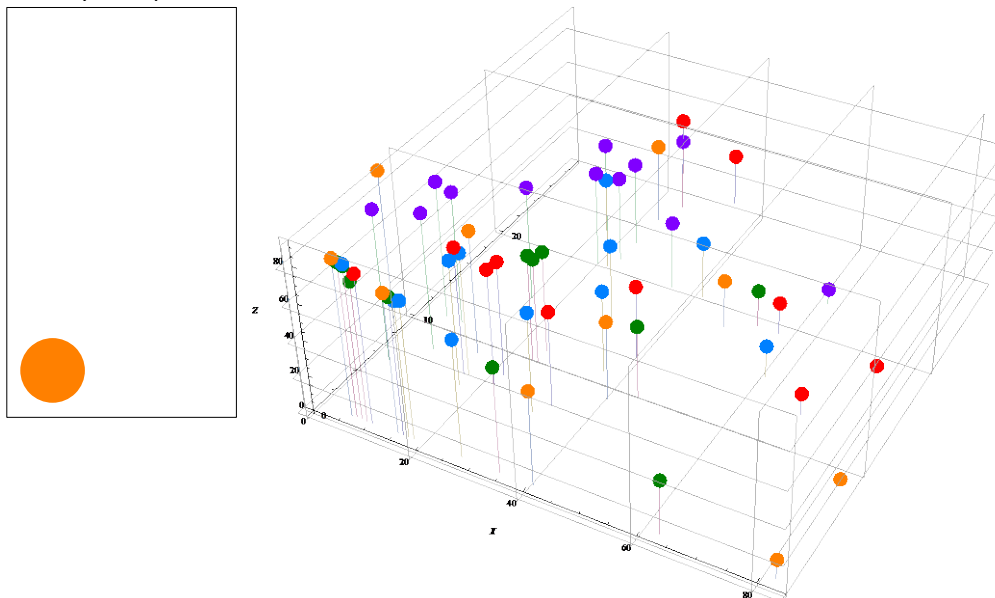
Figure 10: Adoption of Web 2.0 Technologies by CSOs

There is a clustering of services around the laggard space (high on the z axis) and around the intermediate space (high on the y axis). While this diagram conveys a broad sense of the adoption patterns it is a visually 'busy' diagram. The geometric center aggregates the spatial medians and creates one point per organisational category and one point per social service.

20. Geometric Center per Organisation Type

A geometric center can be found for each organisation type. This illustrates where an organisation type sits in terms of the adoption categories across all social media services i.e. the services have been reduced down to one point (the geometric center) per organisation type. Figure 11 illustrates where all organisation types lie with respect to the adopter categories.

Figure 11: Geometric Center per Organisational Category
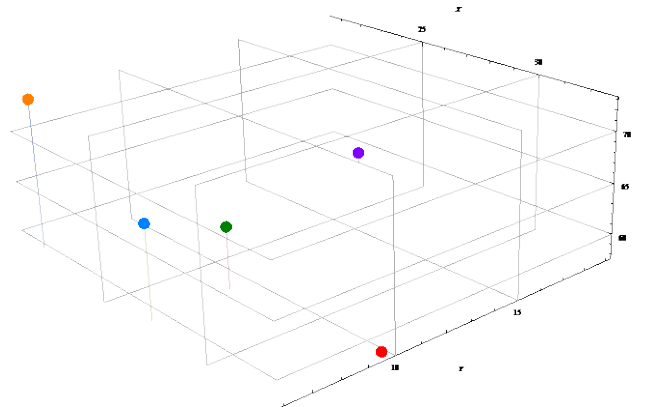
Advocacy organisations (red) are the only organisational type that sits in the leader category. Development organisations (blue) and think tanks (green) lie somewhat in the intermediate category, while the organisations termed 'Other' (orange) is in the laggard space. Non-profits (purple) are firmly in the intermediate space.

21. Geometric Center per Service Type

Figure 12 illustrates the dispersion of individual social media services across the adopter categories.
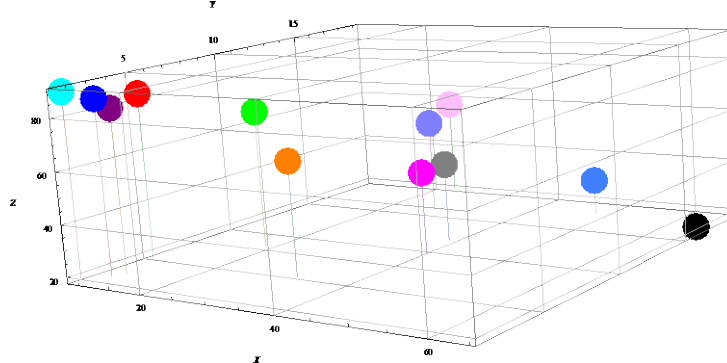
Figure 12: Geometric Center for Social Media Services

Only social networking services and messenger applications have a high x value indicating that they are in the leader space. There is a clustering of four services firmly in the laggard space (high on the z axis). The other services predominate in the intermediate space with four leaning closer to the leaders and two closer to the laggards.

22. Adoption Categories: A Summary

Two alternate representations of adoption categories have been presented, one from the classic diffusion of innovations framework and the other using the concept of a spatial median. Figure 13, adapted from Segars & Grover (1999), profiles the twelve social media services under investigation with respect to the leader and laggard adoption categories. Even though the Segars & Grover model was originally used to illustrate different concepts (specifically strategic planning constructs) the model is still a convenient way of summarising adopter categories.

Using the matrix values obtained from the spatial median calculations (recalling that leaders, intermediate and laggards correspond to the x, y and z axis respectively) leaders and laggards data points were obtained by the difference in the leader and laggard matrix values (see Table 1).

The data midpoints for each service are plotted onto the vertical axis of Figure 13. The horizontal line indicates a mid-point between leaders and laggards. The greyed out area in the diagram represents the intermediate category (early and late majority). Figure 13 provides an alternate visual summary of social media adoption and corroborates the evidence of the low adoption rate of social media services in South African civil society organisations. This is in respect of the twelve services investigated. The adoption patterns are not uniform across organisation types and neither are they uniform across the different services.

Table 1: Matrix Values for Leaders and Laggards Categories

Social Media Service	Matrix Data Points	Leader - Laggard (Rounded)
Socialnetworkcenter	64.5558, 16.5748, 19.0004	44
Socialbookmarkingcenter	11.7977, 2.20179, 86.0005	-75
Downloadingpodcastscenter	20.038, 7.8894, 72.4291 7.8894, 72.4291	-52
Producingpodcastscenter	11.5505, 4.45702, 84.1767	-73
Photosandmultimediacenter	39.9628, 11.3416, 48.7322	-9
Creatingblogscenter	28.2842, 15.5656, 55.4119	-27
Monitoringblogscenter	13.2845, 2.50878, 82.1623	-69
Microbloggingcenter	24.0, 19.0, 57.0	-33
Wikiscenter	33.5646, 4.72326, 61.9465	-28
RSScenter	41.0537, 9.38449, 49.7065 9.38449, 49.7065	-8
Datamashupscenter	9.14251, 1.44464, 89.548	-80
Messengerapplicationscenter	50.0, 17.0, 33.0	27
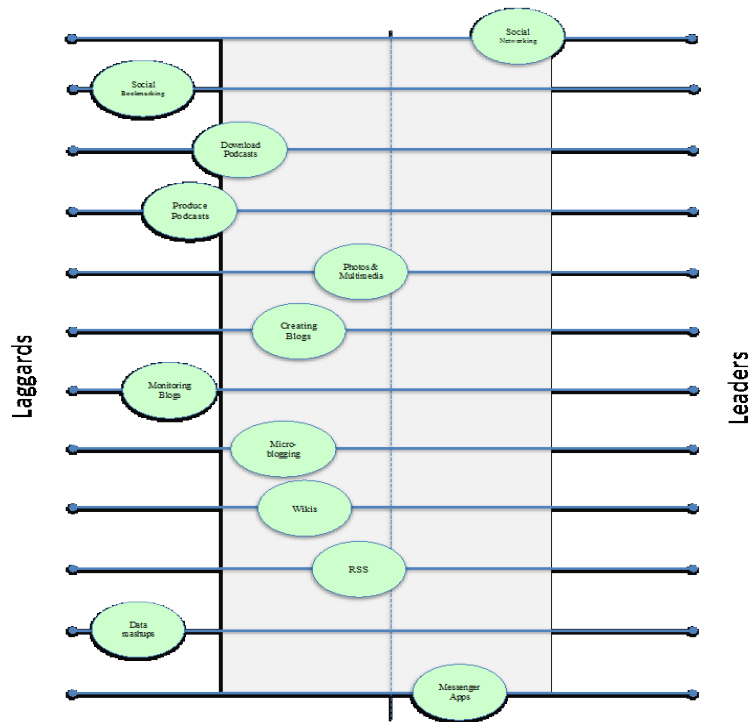
Figure 13: Summary of Social Media Adoption across Adopter Categories

23. Conclusion

This paper has introduced the geometric mean and geometric center as alternate visualisations of the Diffusion of Innovations Theory. The concepts were illustrated with data from research conducted on South African Civil Society Organisations. Using the spatial median calculations for the different web 2.0 applications we further presented another visualisation of the state of adoption of Web 2.0 technologies by South African CSOs, by adopting Segars and Grover (1999). We believe that these visualisations provide the researcher and reader with a richer sense of the 'state of play' and are less amenable to manipulation to 'fit the curve'.

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Crowdsourcing Design and Citizen Science Data Using a Tabletop in a Nature Preserve

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Abstract: We present an approach to motivating participation in a citizen science platform by crowdsourcing its interaction design through its users. We demonstrate our approach through *NatureNet (NN)*, a citizen science project that encourages visitors of a nature preserve to document their observations. Our project incorporates a social media platform within the nature preserve, a cell phone app. and a website, that collectively facilitate sharing, education, and decision-making about outdoor activities to pursue. In the centre associated with the nature preserve, visitors see a map and a collection of photos on a tabletop computer, and are encouraged to borrow a smart phone with the NN app. The crowdsourced design approach adds an additional component where users can collectively redesign how the project interfaces with the experience of being in the nature preserve. These *design ideas* can be technical, such as changing the NN interface or suggesting new features, and/or experiential, such as suggesting a new activity for visitors to perform on their walks. The mission of the preserve where NN is installed is to increase ecological literacy and motivate visitors to think about sustainability and conservation. The citizen science platform assists with this by facilitating observation, reflection and analysis of flora and fauna. The crowdsourcing design component lets users discuss and collectively improve the citizen science platform. The hypothesis is that users who have more of an active stake in shaping their involvement with the platform and the community will be motivated to participate more, and additionally that a social media platform that is iteratively re-designed by its users will improve in quality over the course of its development. Two preliminary studies show that this integration of technology with the visit to the preserve is compelling, and appears to assist visitors to see and observe nature more closely. Visitors are strongly motivated to collect and contribute nature data using the NN system. Initial participatory design sessions suggest that using the phone app. encourages visitors to notice details about nature that they would probably otherwise have overlooked, with even the naturalists in the park commenting that with it they observe things that they did not expect to see. On one occasion, a naturalist spotted an unusual insect in a photograph of a plant that he did not know was there at the time he took the photograph. Visitors also exhibited excitement about seeing their data on the tabletop and comparing it with the data of others. They liked the communal aspect of viewing data with others around the tabletop, and hearing comments from others. The suggestions about how to modify the design of NN included requests to add some specific questions to direct visitors' activities, encouraging the visitors to identify meaningful science-like challenges.

Keywords: crowdsourcing, citizen science, motivation, metadesign, multitouch tabletop

1. Introduction

Citizen science is a process by which citizens contribute data to scientific projects (Bonney, 1996; Cohn, 2008; Rotman et al., 2012). According to the topology of citizen science projects developed by Wiggins and Crowston (2011), many of today's citizen science projects are entirely mediated by information and communication technologies (ICTs) and can be considered a form of crowdsourcing applied to science. In many cases, these ICT-mediated citizen science projects gain benefits through crowdsourcing. For example, the Great Sunflower Project, created by a single scientist, attracted a crowd of 80,000 volunteers to submit observation reports of insect activity in their gardens, all through a simple web portal (Prestopnik and Crowston, 2012).

Crowdsourcing first demonstrated its benefits in other domains, such as group creation of a large and comprehensive encyclopedia such as Wikipedia (Giles, 2005), the provision of user study platforms with Amazon's Mechanical Turk (Kittur et al., 2008), and transcription of ancient text (von Ahn et al., 2008). While an individual may lack formal expertise and have limited ability, a large crowd of individuals may collectively

possess the expertise and creativity necessary to identify and solve difficult problems. Hong and Page (2004) demonstrate that "a random collection of agents drawn from a large set of limited-ability agents typically outperforms a collection of the very best of that same set," as the diversity of the former trumps the ability of the latter. Previous research on promoting crowdsourcing has been focusing on increasing the size of the crowd through various incentive schemes; less attention has been paid to actual social interactions among members of the crowd.

Citizen science projects driven by crowdsourcing, while enjoying the same sort of benefits as crowdsourced projects in other domains, inevitably suffer from some of the same obstacles experienced by them as well. A major obstacle cited in the literature is lack of participation. As with most volunteer activities (Clary et al., 1998; Locke et al., 2003; Boezeman & Ellemers, 2007), there is the challenge of getting people to join the effort and contribute in sufficient numbers (Raddick et al., 2010, Nov et al., 2011), not just once but on an ongoing basis (Rotman et al., 2012; Rotman et al., 2014).

The use of crowdsourced design as an approach to increase participation in NN is informed by a rich background of research on why people participate in various types of online communities: open source software (Wang and Fesenmaier, 2003; Nov, 2007), crowdsourcing applications (Brabham, 2008; Paolacci et al., 2010; Frey, Haag and Schneider, 2011; Shaw et al., 2011; Rogstadius et al., 2011) and open innovation communities (Wasko and Faraj, 2000; Merrick et al., 2011; Antikainen and Väätäjä, 2008). These studies recognize that different types of users can have vastly different reasons for participating (Clary, 1998; Lampe et al, 2010; Antikainen and Väätäjä 2008; Maher, Paulini and Murty, 2010; Malone et al., 2009), and they may change over time (Bryant et al., 2005). By including the crowd in the design of NN, we appeal to three of the major motivations that individuals claim for participating in online communities: fun, challenge, and socialising (Paulini, Maher, and Murty, 2013). As seen in systems such as threadless.com and quirky.com, including the crowd in the design process establishes the individuals in the crowd as stakeholders in the success of the system. So, in addition to motivating the crowd to participate in citizen science, a goal of crowdsourcing the design of NN is to establish the crowd as stakeholders in the success of NN.

Fischer (2010) describes the metadesign approach, in which a system's designers *underdesign* it in order to allow users to help shape it to meet their needs. The role of the designers becomes the development of a framework for users to construct a system from, and the provision of tools necessary for them to do so. Fischer and Hermann (2011) suggest that this end-user customization enhances quality and a social media system's ability to dynamically evolve with its community of users. With NN we extend this notion of metadesign to a social media platform capable of crowdsourcing its own design. We posit that this approach will both improve the quality of the system by leveraging a more diverse population of participants in its design and improve the motivation of its users by allowing them to participate in shaping the platform they use.

Bringing citizen science into the natural environment is possible with the design of embedded and immersive technologies that bring the affordances of the digital environment into the physical environment. Our choice of embedded and immersive technology is a tabletop system that encourages people to interact with maps, data, comments, and each other by leaning over the table together and using large body movements. Kim and Maher (2007, 2008) show that a tabletop environment results in large body movements similar to an immersive environment, in contrast to the smaller arm movements that occur when using a keyboard and mouse in a desktop environment. The research results suggest that the greater involvement of the users' body movements impacted their sense of being immersed in the environment, leading to a kind of interaction design consistent with Laurel's "Computers as Theater" metaphor (Laurel, 1993).

The objective of this project is to increase participation in citizen science and encourage individual and social identification as citizen scientists by crowdsourcing the interaction design and biodiversity data collection using embedded interactive technologies. In this paper we describe the NN social media system that supports the project and which consists of a mobile app, a tabletop system, and a website for use by individuals, small co-located groups and large groups distributed across the Internet, respectively. We then discuss how we co-designed NN with visitors and naturalists at the Aspen Center for Environmental Studies nature preserve and how this approach informed the evolving design of the system in response to our growing understanding of the nature preserve visitors. Finally we briefly mention the next steps in our project.

2. Research Questions

NN started in August 2012 with a focus on increasing motivation to participate in citizen science through a crowdsourcing design approach. The intent is to encourage local communities to work together toward a better understanding of their nature preserve through social media oriented toward scientific challenges and data collection. Embedding the technology in the preserve itself creates a sense of community around the place which would not be as immediately present in approaches requiring technological follow-up after a site visit, such as approaches based purely on websites (i.e., Zooniverse). Moreover, NN is not exclusively in-situ; it can be enhanced by websites to enable *virtual* follow-up visits.

The NatureNet project is early in its life, but our exploration is driven by two broad categories of research question:

(1) *Crowdsourcing interaction design for citizen science.* What are the roles and tasks of the crowd in a citizen science metadesign process that engages the public in the experience design? Once we understand those roles, can we develop and evaluate a metadesign-based model of crowdsourced experience design for citizen science?
(2) *Motivating participation in citizen science.* Does crowdsourcing the design of interactive technology for a citizen science platform motivate participation in the collection and sharing of biodiversity data? How can we identify correlations between crowdsourcing features of user experience design and the motivation to participate of individuals and groups?

The focus of the current study is the first half of the latter question, concerning the interaction between user motivation and crowdsourced design.

3. The NN System

A screenshot of the current design of the NN tabletop is illustrated in Figure 1. The design has developed and changed in response to the crowdsourced design ideas, evaluations, and contributions and will continue to do so over the course of the project. The initial components of the interactive display included:

- Maps, Views, and Data: an interactive view of the nature preserve showing the layout, paths, biodiversity data, and current activities or challenges.

- People and Groups: shared information and social media about individuals and groups.

- Be a Scientist: interactive contributions and access to various perspectives on biodiversity data as well as conversations about the data.

- Be a Designer: ideas and comments on the interaction design and contributions of new scientific challenges.

4. Incorporating Crowdsourced Interaction Design

Crowdsourcing design is a relatively new approach to including users and stakeholders in the design process. Typically, collaborative design involves a team of professional designers that gather requirements from stakeholders. Participatory design extends the idea of collaborative design to specifically include the stakeholders and users in various stages of the design process. In crowdsourcing design, individuals may volunteer to contribute to the design process. In typical collaborative design, roles are ascribed to individuals according to their expertise. Participatory design involves stakeholders in the design process whose roles are determined by the design team. Crowdsourcing design actively involves an open community in design, basing the design in part or in whole on their design contributions. In online crowdsourcing systems, such as Sparked.com, volunteers can choose roles based on their self-selected interests and abilities. Other platforms, such as Quirky.com, draw ideas for design problems and ideas for alternative solutions from the crowd and encourage people to choose and change their roles as they participate over a period of time.

Figure 1. A screenshot of the NN tabletop. A list of users is shown on the right, a list of design ideas is shown on the left, and an interactive map with various collections of photos and comments dominate the rest of the tabletop.

Our proposed crowdsourcing design process model is illustrated in Figure 2, in which the crowd participates in activities associated with new design ideas and a dedicated design team mediates by managing the integration of the ideas from the crowd. The crowd contributes to the creative development of the design, and the design team manages the design process by reviewing and selecting design ideas and augmenting them with their own, as well as managing voting and rewards for ideas, evaluation comments, and implementation contributions. The progression of the ideas toward a new version of the design is illustrated in Figure 2. An individual in the crowd is not constrained to follow the progression and can contribute ideas at any time, and many ideas may be in different stages of the process at any time. The operations that make up an iteration of the NN design process are:

- Idea submission: This is a process of collecting new ideas for extending or modifying the features of NN, or to add new technology. Ideas submission is crowdsourced.

- Idea comments/votes: Contributing a new idea starts a discussion thread in which anyone can comment and or vote on the idea. We started with a simple "like" button for voting on ideas. Idea comments and votes are crowdsourced.

- Idea selection: Idea selection is based on a synthesis of crowdsourced comments and votes. The final selection of an idea to be integrated into the next version of the design is done by the design team, where the ideas more heavily supported by the crowd are more likely to be selected by the designers.

- Idea implementation: Once an idea has been selected, it will be implemented in the next version of the design. While implementation can be most efficiently and effectively carried out by dedicated programmers on the design team, individuals in the crowd who have programming skills can also contribute to programming, perhaps on simpler features. It is important that the software is made available on open source repository (e.g., github) and linked to the project website.

- Idea integration: The integration of new software modules and functionality is managed by the design team to create a new version of the design.

- Idea evaluation/votes: Once a new idea has been implemented as a design feature, anyone can submit comments or votes for evaluating the new features. Idea evaluation is done by the crowd.

- System modification: A new version of the system is installed on the tabletop display in the park by the design team.
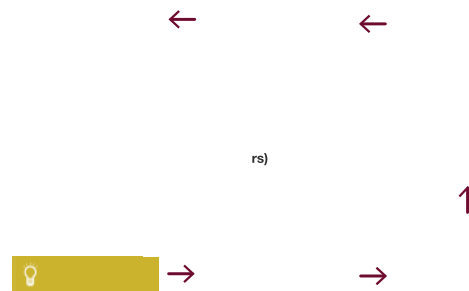
Figure 2: NatureNet Design Process Model

Following the design process model the crowd can see the effect of their ideas and contributions and become part of an evolving organization. In the section below, we report on two on-site deployment efforts to test, validate, and gain insight into our proposed design model as deployed in the field.

5. Two Field Deployments: Collecting Nature Data and Design Ideas

We deployed NN at the Aspen Center for Environmental Studies (ACES) in Aspen, Colorado in June 2013. Once deployed, visitors and staff collected pictures of flora and fauna that interested them and about which they wanted to find out more. A range of interests were expressed, with visitors making observations birds, insects, flowers and other plants. This data was automatically uploaded on to the tabletop in the ACES nature center. When the visitors arrived back at the center they could view their own observations as well as the observations of others.

Our research team visited ACES twice to conduct early field testing and hold preliminary participatory design sessions with users. The visits occurred in July and October 2013. The table below summarizes the data collected during these two visits. Another visit is planned for March 2014, and the project will scale up to larger groups and greater numbers of contributions during Spring/Summer 2014. Peak summer traffic to ACES is expected to be over 100 visitors per day, providing many opportunities for larger studies in the coming months.

Table 1: Summary of user activity during two NN field testing cycles

	Total users involved	Photos contributed	Individuals contributing design ideas	Design ideas collected
July	35	114	7	77
October	28	152	11	97

The first deployment lasted six days. During this deployment, the NN platform was still an early prototype. We wanted to iterate rapidly, that is, to go through the design process model (illustrated in Figure 2) one cycle per day. In order to do so, we brought a complete team consisting of four designers and two programmers. Following the design process model, designers were responsible for facilitating crowdsourcing idea collection, discussion, and selection. These steps occurred during ACES's opening hours when there was a constant stream of visitors. Programmers were responsible for rapidly implementing ideas that were determined by the design team members to be the most crucial. Figure 3 shows artifacts from the prototyping process.
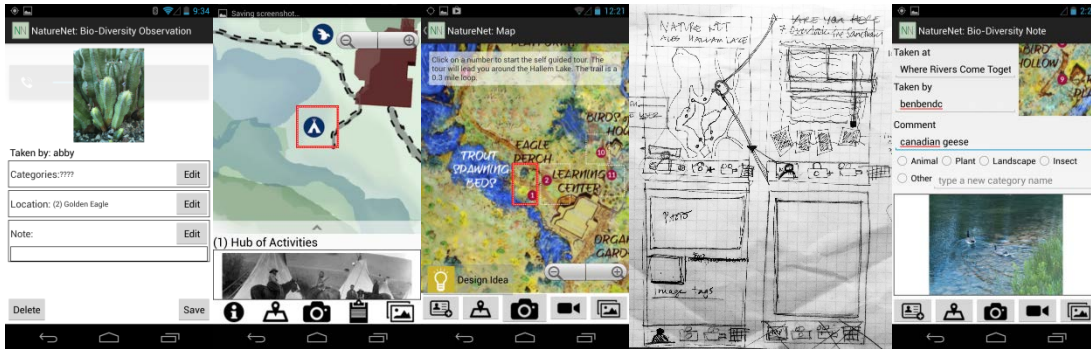
Figure 3: Artifacts reflect the NN rapid prototyping process

The second deployment lasted four days, and the intent was to study a single cycle of the crowdsourced design process in more depth. We were specifically interested in how a stable design can be evolved through crowdsourcing. This time, we sent a team of four designers, with programmers standing by remotely to resolve technical issues. This "remote" collaboration was made possible because we built into the NN platform the capability for administrators to log on remotely for update and maintenance.

Design ideas were collected in a variety of ways: through log data, interviews, and shadowing. While our intention is to crowdsource design ideas directly in the interface on the tabletop and the mobile app, we started our crowdsourcing process face to face. The comments and observations we collected from participants during these two deployment exercises may be divided into two categories: interface and context.

- **Interface:** Participants provided the greatest number of comments on the interface design issues of the NN platform. This finding is encouraging to us because the premise of our research is to involve nature preserve visitors in the evolving design of the citizen science platform, instead of giving them an already completely designed platform. Examples of ideas for improving the interface included *"If you see something interesting and want to ask a naturalist, take a picture"* and *"Wanted to be able to connect to Flickr via the app."* Not all ideas were selected for implementation due to resource issues. For example, the former idea was implemented, whereas the latter was not.

- **Context:** Participants also gave valuable feedback on how the NN platform fits the local context, in this case, the nature preserve in ACES. For instance, a staff member commented *"The only reason to use technology [in the preserve] is to get you closer to the nature."* Some comments were related to visitors' and staff members' desire to set up goals and missions (e.g., to encourage people to look for signs of bears) to make the experience more challenging and interactive. Some were related to existing activities, for instance, *"[we are] building up an Adventure Backpack Program here [a kit for visitors to take with them as they walk] and this may help."*

To collect data on motivation and engagement, we conducted a focus group and a survey with eight participants (five males, three females). The questions in this survey include six open-ended questions:

1. **What kind of things did you do while you were using NN today?** The majority of the respondents answered that they took pictures and made observations.
2. **What first drew you to interact with the NN table?** Most people were drawn by the bright color and large screen of the tabletop visible as they entered the nature center.
3. **What caused you to stop interacting with the NN table?** There was no clear common reason. Some stopped because the app. froze. Some had to leave.
4. **How, if at all, did using NN change what you did at the park today?** About half indicated NN helped them *"observe closer,"* make more *"focused observations,"* and *"lingered longer"* which resonates strongly with a staff member's statement *"The only reason to use technology [in the preserve] is to get you closer to the nature"* mentioned earlier as an example of a comment on how NN fits the local context.
5. **What was something you liked about NN?** Respondents offered a range of positive responses. Some liked the ability to compare their observations with other observations. Some liked the ability to make individual contributions.
6. **What was something you would change or improve about NN?** Most of the suggestions for improvements were directed toward the user interface, such as *"better map image"* and *"more intuitive interface."* Despite several design process cycles, the interface is still not perfect, which

provides further evidence in support of our claim that a citizen science platform should not be stagnant but should let participants contribute ideas for further evolution of the platform.

In addition to open-ended questions, the survey had 12 statements that could be rated on a 5-point Likert scale to express the degree to which a participant agreed with each one. These statements probed two aspects: usability (e.g., *I found it easy to use the NatureNet mobile app*, *I found it easy to add comments to pictures on the tabletop*) and motivation (e.g., *I would contribute again to NatureNet because it was fun*, *I would contribute again to NatureNet because I like to learn*). In general, respondents were most neutral on the question of whether they found NN easy to use and whether they would contribute again for social reasons (i.e., "*because it is a social activity*"). On the other hand, they were very positive about sharing their observations with others and seeing what others thought about their observations. We found that the highest number of respondents indicated strong agreement that they would contribute again "*because of my interest in plants and animals*" and "*because I want to help scientists*." Because of the small sample size (n=8, a consequence of the early phase of development the project is currently at), we were unable to draw statistically significant conclusions, except to see this as an encouraging sign for further research about motivation and crowdsourcing.

6. Conclusion

We have developed an approach to augmenting the motivation of social media platform users known as *crowdsourced design*. This approach allows the members of a community to iteratively redesign the platform on which their community is deployed, hypothetically leading to greater investment and sense of ownership among users, in addition to producing a system better customized to user needs. We have developed and deployed an example of this approach, NN, and conducted initial participatory design sessions with it. These initial investigations provide the design and development teams with the knowledge to better support iterative crowd-driven development. Our early results show that the crowd has identified many design ideas that were not anticipated by the design team, and that including users in design helped engage them in the project. These results provide a baseline for future studies in the deployment of NN for comparing engagement, the scientific data and comments collected in the preserve, the design ideas for citizen science projects, and their motivation to participate. Our plans are to deploy NN at ACES in summer 2014 and to engage people in other locations so we can observe how different communities direct the design of NN in different directions.

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A Massive Open Online Courses Odyssey: A Confessional Account

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Abstract: Based on data collected during a nine month ethnographic study of three massive open online courses to explore practices in distance education. This study offers a snap-shot to this evolution of distance education. Recognizing that my role as researcher was also affected by my own experiences as an academic who has worked in the field of information systems and their role in education for over 30 years, I chose to write this report as a confessional account, a practice informed by ethnography. The conclusions are based on this experiential research study. Therefore a goal in this paper is to challenge the taken-for-granted assumptions underlying the revolutionary nature of massive open online courses and demonstrate that these courses are a natural evolution of distance education. At the same time to highlight the role social media and information systems play in the developing of these courses.

1. Introduction

Massive Open Online Courses (MOOCs) are a natural evolution rather than a revolution of distance learning courses. An evolution afforded by the technologies supporting them. Natural because once the technology affords more usability, users demand more and are less forgiving of options that offer less than what is available on the market. MOOCs use social media platforms to offer courses to people all over the world. Thanks to the emergence of Web 2.0/Social Media tools, and the skills their users have developed, MOOCs came to the attention of universities as a way to move forward from their current enrollment woes. Obviously there are many different opinions for or against MOOCs. This generated our research question: Are MOOCs, the Future?

To answer the question, a nine month ethnographic study was planned which included taking three courses in two different platforms. Field notes are reported as a confessional account as a way to discover the taken-for-granted assumptions we have when participating in these courses and to evaluate their role in distance education. The study was conducted during a sabbatical leave during the academic year 2012-2013.

The paper first engages in a brief review of the evolution of distance learning from its origins to the emergence of MOOCs. After that, a statement of the research methodology used is presented. A justification about using a qualitative methodology, ethnography is offered as well as the rationale behind using confessional writing in this study. A description of the *odyssey* of taking three courses, one in artificial intelligence, one in data science, and one in the use of information and communication technologies (ICT) in education along with tens of thousands of other participants, using familiar elements, such as attending lectures on short videos, reading, taking quizzes, writing tests, and spending long hours figuring out programming assignments; but also discovering new elements for learning such as discussion boards, study groups over social media platforms, auto-grading protocols, and the absence of personalized feedback. These experiences are used to identify the taking-for-granted assumptions we have when designing learning material. The paper concludes offering some direction based on the findings while recognizing the exploratory nature of this research.

2. Distance Learning

In this paper I use distance education and distance learning as synonyms. Aspects related to the analysis, design and implementation of distance teaching strategies and tools are not addressed here, but aspects of learning that are discussed in the distance education literature are important to this discussion. In this section I present a brief history of the evolution of distance learning to show that MOOCs appeared as a natural evolution of distance learning and are not a revolution as some authors have characterized them (Christensen, Horn, and Johnson 2011, Friedman 2013, McHaney 2011). While Bates (2005) recognizes that it is in distance learning where the issue of radical changes to the educational system is clearly visible, the more the technology changes, the more changes are introduced into distance learning. Here, radical does not necessarily means revolutionary.

2.1 From Origins to Social Media

Nasseh (1997) directly singles out Britain's Open University as the initial force that "*brought a new vision of independence for distance education as distinct from traditional education*" supported by developing at the same time a large body of research in distance learning. The Open University is a leader in applying technology to facilitate distance learning. The field is older than the Open University, but for the purpose of this paper, it is a good starting point. Founded in the late 1960s, it opened its doors in 1971. It rapidly became a model for other countries to follow, especially Commonwealth countries, as well as the US and Japan. This model overcame the restrictions of *place* and *time* within a country, but it also eliminated the restrictions of national boundaries. There is a well-documented history of the role Charles A. Wedemeyer played in the creation of the Open University (Moore 2013). He is considered to be the *father* of modern distance education.

In Canada, the Centre for Distance Education at Athabasca University, in Alberta is the Canadian *Open University,* even though many universities now offer open courses; its Canadian Institute of Distance Education Research (CIDER) is internationally recognized as a prominent research space. Some of the restrictions we face due to our geography (the second largest country in the world) and demographics (80% of Canadians live within 200 km from the US border) have been overcome thanks to offering open courses to serve small communities dispersed in our true north. Athabasca offers a highly regarded Master's degree in distance education and in 2008 it launched the first North American doctoral program in distance education (Fahlman 2009). Athabasca was founded in 1970 as a conventional institution; it is now entirely committed to distance education (Byrne 1989).

Distance education has emerged as one of the most (if not the most) significant developments in education in the last 25 years. It has played the role of opening opportunities for learners and instructors and is now well-entrenched in the operations of any university, college, and even as a training facility in some corporations, the army, continuing education programs for teachers, nurses, doctors, or anyone seeking to improve their set of skills. And in the last 15 years, the frenzy of taking everything to the internet has increased the excitement of developing new opportunities in this medium. Now the Internet and the Web are a common space for almost everyone looking to accomplish almost anything. With the hype gone, now we have the time to seriously look for answers to more relevant questions regarding the design and delivery of programs through these technologies. So far, there are many voices still recommending a slower approach to use them, few bold statements are expressed. However, now the voices claiming to use these tools are coming from our own students, who have grown up with these technologies and are at ease with them, *digital natives* (Prensky 2001), *millennials* (Howe & Strauss 2000), or *net gens* (Tapscott 1997, 2008). These learners are driving their instructors to explore the most recent technologies known as social media or social networking for which there is not really much literature available to guide them.

Social media is now being used to advance distance education, not in a revolutionary way, mostly as a natural evolution due to the affordances of these new technologies; the common characteristics of these being their constant changes, new realities, ubiquitous access, new platforms, and rapid acceptance by many users. Moore & Kearsley (2012) updated their definition of distance education to "*teaching and planned learning in which the teaching normally occurs in a different place from learning, requiring communication through technologies, as well as special institutional organization.*" As we will see next, MOOCs fit this definition to a T.

2.2 MOOCs

Massive Open Online Courses (MOOCs) are now offered mostly in North America, but the audience for them is universal. Predominant platforms include Harvard/MIT/Berkeley's edX.org, Stanford's Virtual Lab, Coursera.org, and Udacity.org. The majority of available courses are in English, but there are offerings in other languages as well. Massive is a correct moniker, these courses attract large audiences from around the world, enrollment in some courses are over 100,000 students (Stanford's Artificial Intelligence got over 100,000; Harvard's Computer Science course got over 180,000). An average MOOC takes about 50,000 students (Ho et al 2014). Open indicates that these courses are open to anyone that meets some (non-enforced) requirements, these are self-selected, basically if you have access to a computer with internet connectivity and some time to work on the material, you can just go ahead and register, the only requisite is to create an account in their site using a valid e-mail account. These personas are then offered a list of courses from which they can select those they want to take. Everything happens online; in the course's site one finds all the

materials to do the work. This also makes courses available *anywhere & 24/7* which are the mantras of the internet and all social media sites and tools.

Siemens (2012) credits Bryan Alexander and Dave Cormier with coining the term in a discussion regarding the future of higher education in his blog. The concept was first explored by Siemens himself and Stephen Downes who were developing a course format to fit the theory of connectivism as early as 2008. The course, *Connectivism and Connective Knowledge* is described in Kop & Hill (2008). The course was offered even though it was not referred to it as a MOOC.

Stanford University pioneered efforts to launch a course on artificial intelligence online. Two of its professors, Sebastian Thrun and Peter Norvig offered for free a course they were teaching to their students. They had all the resources; it was just a matter of obtaining the university's authorization to open the course to anyone who wanted to take it. Considered first as an experiment, it attracted over 150,000 students, in part the prestige associated with Stanford was speculated as the reason behind its success. But what happened is a bigger story. Encouraged by their success they decided to build a start-up, which was in line with Stanford University's history. The start-up became Udacity.

The experiment was not missed by other universities. In 2012 MIT, a pioneer in open learning, concentrated mainly in opening its courses through the Open Courseware project, joined Harvard University and launched edX, an initiative founded by large donations aiming at developing more MOOCs. Coursera came shortly after and currently offers courses from more than 100 universities from all over the world. In Europe, the Open University launched FutureLearn, and Germany established Inversity. Australia launched an initiative known as Open2Study.

3. Research Method

If we want to understand the social impact ICTs are having in distance learning, we need to expand our research methods to answer questions that are being asked about them; employing techniques that have been used successfully in other social sciences. Techniques from all research traditions, experimental, case studies, ethnographic, comparative, and historical can be used to acquire empirical knowledge that later on can be synthesized into theory that can serve in the future to guide new research. For this study, considering the newness of the space I decided to use a qualitative approach.

Qualitative research methods offer a different path to understand social phenomena. Exploratory studies are a way to figure out what elements are essential in studying a particular setting within an organization, or to see how members of a community make sense of the interactions they engage while participating in the daily activities that shape their organizational lives. Among the options, ethnography provides a rich tradition that has helped organizations to understand some of the aspects that explain their on-going commitment to fulfill their mission (Nash 1993, Orr 1996, Anteby 2008, Krause-Jensen 2010), explain their demise (Schein 2003, Lane 2011), or simply depict their organizational culture (Nash 1993, Garsten 1994, Clifford 1997, Watson 1994).

3.1 Ethnography

Ethnography is an anthropological research method that uses first-hand observations made by a researcher immersed over an extended period of time in a culture unfamiliar to them. It has been used in Anthropology for over a century. Ethnographic methods have reached a high level of sophistication. Fetterman (2010) describes Ethnography as "*the art and science of describing a group or culture.*" The description may be of a small tribal group or a classroom in middle-class suburbia, or a geographically distributed classroom in cyberspace. Ethnographers have developed an ability to keep an open mind about the groups or culture they are studying without compromising rigour, as Fetterman's (2010) reminds us that "*an ethnographer enters the field with an open mind, not an empty head.*"

This type of research involves spending considerable time in the field, a classroom, school or community, to observe and learn. Beach (2005) highlights the importance of ethnography in education because "*we want to know about how understanding is formed in instruction, how meanings are negotiated in classrooms, how roles and relationships are developed and maintained over time.*" At the end of these studies, ethnographers produce storied versions of these things. These stories reveal, interpret and represent everyday encounters.

Stories depicting the day-to-day socializations of individuals to produce narratives explaining how these processes actually happen, not necessarily why they happen or how can be designed. Their analysis offers the possibility of new theory.

Ethnographers are aware that their raw materials of cultural representation are terms, idioms, labels, frames, phrases, categories, sentences, stories – words not worlds; maps, not territories; representations, not realities. (van Mannen 2011). It is in what is said where the value of the data lays. This encourages ethnographers to continue writing these stories, because of the value *others* may find when reading them.

3.2 Confessional Writing

The aim of this study was to explore the evolution of distance education in the form of MOOCs in order to develop a grounded understanding of what entails being part of one of these courses from a learner's perspective. Researchers in several fields have looked at work practices in their day-to-day detail using methods like ethnography that are sensitive to the social conditions of those practices. Confessional writing requires the researcher to give a self-revealing and self-reflective account of the research process. The researcher designs an auto narrative intended to expose assumptions and practices of the *culture* under study. It is also a good way to *discover* the researcher's own assumptions, especially those that serve as biased or pre conceived ideas that stop us from *learning* something new. The text then, becomes an opportunity to challenge these biases and see these *new* offerings as *opportunities.*

Van Maanen (2011) suggests that the ethnographer should "*cast oneself as a simple student of the observed group, an apprentice of sorts, who comes to learn of the culture much as any child or newcomer to that culture might.*" Since the immersion in these course will allow me to stand *on the other side* of the teacher student relationship, one that I have been enacting since the early 1980s. I decided to look for courses in which there was also the opportunity to *play* that role in the most realistic manner, courses where I would have the opportunity to *learn* something; courses within my range of expertise, but far enough from my area of *comfort*. Therefore I identified an environment to lead me to a situation in which I could study people engaged in learning along with me using distance education. That technology had recently been launched: MOOCs!

4. A MOOC Odyssey

4.1 Sabbatical leave

With more than 30 years of experience working in education in several universities on two continents, and several countries, the idea of studying MOOCs came at the right time. I was granted a sabbatical leave during the academic year 2012-2013 to continue working on a project regarding empowerment of students through ICT-based education (Ramirez et al 2009, 2010, Ramirez 2011). Only by engaging in a MOOC one can truly understand its dynamics, and experience all the possibilities. During this time I engaged in an ethnographic case study to experience the opportunities, limitations, and possibilities offered by MOOCs. I enrolled in three MOOCs at two different platforms: edX.org and Coursera.org.

The material generally includes a syllabus, guiding the participants along the material. These courses are scheduled around 6 to 8 weeks. For example, in a Coursera course, every week an e-mail alerts students to new material that has been posted in their site with a link named: GoToClass. On the site one finds lectures packed into 10 to 15 minutes videos (for easy download and access), accompanied by pdf files of printed slides or notes. Within the videos there are sometimes embedded multiple choice quizzes verifying that someone is actually paying attention to the video. There are assignments and other materials such as recommended readings.

Perhaps the richest contribution of these courses is the collaborative aspect that is expected to happen when one has access to such a large number of participants and especially knowing that these participants are tool savvy and willing to engage in collaborative activities. They are allowed to create content as long as they do not disclose some of the expected outcomes of assignments or quizzes. For computer science courses, sharing code is discouraged, and only discussions about how to address specific challenges are encouraged.

4.2 CS188x Artificial Intelligence

I enrolled in this course in the Fall of 2012. It ran from September 24 to November 12 [8 weeks]. It was offered by UC Berkeley. The goal of the course was "*in addition to learning the theoretical foundations of AI, [students] will also get hands-on experience implementing AI algorithms in a video-game-themed context.*" In the welcoming e-mail I received I was informed that I was joining tens of thousands of other students from around the world. The course required both programming and math backgrounds. Required programming experience was at the level of a first course for Computer Science majors. The language used was Python. The math background was knowledge in probability at the undergraduate level. I met the prerequisites except the one about Python, a language I was able to learn fairly quickly because of my knowledge of C++ and Java.

4.3 Introduction to Data Science

This course, offered by Coursera and delivered by The University of Washington ran from May 1, 2013 for 8 weeks. The background for this course was to have basic programming experience and familiarity with databases, Python, SQL, and R. The target audience for this course was undergraduate students across disciplines wishing to build proficiency working with large datasets to perform predictive analytics.

4.4 ICTs in Education (in Spanish)

Waiting for Stanford's "*Designing a New Learning Environment*" (which originally ran from October to December in 2012; there was a note indicating plans to run it again but it was not launched as expected) I was invited (I guess, based on my Coursera's profile) to enroll in this course, delivered by the Universidad Nacional Autónoma de México (UNAM) in Spanish. The course ran from May 20, 2013 for 5 weeks. I decided to take the course even though I was already taking another course in the same platform, at least the delivery of this was in a different language, and offered by a Latin American university, giving me additional elements to enhance my ethnographic experience.

The course was completely open (anyone was welcomed to the course). The target audience though were teachers (at any level) or people studying to become educators. The course aimed at discussing the role ICTs have played in the transformation of education, by looking not only at the impact ICTs have already had, but also to search for opportunities in changing their role in education.

4.5 A day in the life of a MOOC student

The three courses had basically the same format. I logged in to my course, watched the weekly lecture as a collection of short videos. The videos are basically taped lectures with additional functionality not available in standard lectures, i.e., I was able to pause and rewind the video if there was something I missed, or I had difficulty understanding. They came with closed-captions that run smoothly along the lecture. A couple of quizzes spiced up the videos, to check that I was paying attention. As in standard courses, print outs of the slides were available. This component is done *far from* the *madding crowd;* a very personal experience.
Working on assignments and coding projects was similarly accomplished, but to engage in collaboration (not required but recommended) then one needs to approach the crowd. The venue is the discussion board. Anyone enrolled has the privilege to start a new discussion. Here is where the crowd roams. Because of numbers, discussions multiply very rapidly. These discussions have a title, generally descriptive of the content. Most of the time these topics are questions about issues with the way assignments, quizzes or tests are worded, or strategies to tackle specific aspects of the tasks. One can *subscribe* to these discussions, meaning, that if the discussion gets track, one is informed via e-mail about new content. If one does not subscribe to a discussion, and wants to find some information that may address one's question, the only other option is to *search* for key words, or spend large amounts of time reading multiple postings that may not add any new information to help one move on with the task at hand.

I was able to work on the assignments but had some difficulties understanding some of the way some information was handled in the specific coding questions. These questions for the artificial intelligence course dealt with designing search algorithms that will be tested using the video game Pac-Man. Theoretically I had no difficulties understanding the logic behind the search algorithms, practically I struggled with the logic behind how information is manipulated by the Pac-Man game. I asked several questions in the discussion board, I am still waiting for anyone to answer them, the course ended over a year ago.

I know how to learn on my own. I have had that experience since my first year as an undergraduate student. My first programming course was delivered with a method called: Personalized System of Instruction (PSI), a method developed by Fred Keller and Gilmour Sherman (1974) adopted by my university to *teach* introduction to Fortran, a mandatory course for all first year students, and the only way to earn the credit was through this PSI format. If I have access to the material, I will work my way through it.

What I found frustrating is the absolute unidirectional way of communication available between the instructor and the learner. I was not able to get in touch with anyone running the course. The only available option was to start a new discussion, and hope that another learner would take the time to answer my questions. It was common in these three courses that there were technical problems needed attention along the way. Those were solved in matter of days, but not being able to work on something for a couple of days is a problem when the course runs for 5 or 8 weeks.

5. Findings

What I found is that MOOCs are great at providing access to information on specific topics. These courses are for those self-motivated, highly recognized achievers who will explore the courses' topics well beyond expectations. But, MOOCs are not for everyone. Students enrolled in these courses that need special accommodations, guidance, and other supporting needs, are out-of-luck. Unless they can spend many hours reading through a maze of postings in blog-like boards, their questions will never be answered. Enrollment is astonishingly high, which may explain why there is almost no human interaction between students and instructors, but does nothing to alleviate these problems.

Many students posted the reasons they were dropping the course, mostly their inability to move forward without additional help from someone, which was not available. But since there are no penalties, and it costs nothing, many stay, but not actively. As long as one is registered, one has access to the instructional resources. With completion rates in single digits (Harvard's computer science course had a certification rate of 1%), Ho et al (2014) try to justify the appalling completion rates these courses have by indicating that completion rates are "*misleading and counterproductive indicators of the impact and potential of MOOCs.*" Perhaps, but I doubt my Dean would accept that I or any of my colleagues have similar outcomes in our courses.

6. Conclusion and Future Research

Distance Education keeps on evolving. It is now evident that the use of ICTs in distance education is not only an option, but they are expected to continue being adopted in different and novel ways. This adoption will keep on transforming the field, and that is expected. Change, after all is the only constant in the evolution of the tools and the practice.

Learning is only one side of the education phenomenon, for distance education to evolve, both sides of the phenomenon need to evolve at the same time, not necessarily in the same way. Our learners have changed their learning habits, now it's our turn to rethink how we can best approach the teaching side and embrace the ICTs available to make our task more effective and efficient. At the same time, we need to nurture the new self-directed learning that is emerging due to the new tools available to this new generation of learners.

Empowerment is still a goal I seek when approaching the design and organization of learning spaces, therefore I think that we need to look at MOOCs and other initiatives with an open mind, with caution, but fully accepting that they do have something to offer. What that is needs to be studied. More research in this field is *always* needed (and hopefully welcomed and supported). In our research program we have plans to look at other platforms available including Stanford's Virtual Lab and Udacity.org. Are they doing something different? Something that is having a different impact on those engaged in their courses?

Our research needs to be available to decision makers in universities, especially in those institutions that are already thinking in using MOOCs either to advance their curriculum, to give advance standing to some of their potential students, to empower their current enrolment, to give additional outlets to their faculty, to differentiate themselves from the rest.

These being the early stages of MOOCs, it cannot be decided whether this is the future of distance education beyond that MOOCs are here to stay, and more students will learn to use them as an easy access to well thought-out content. After all, they are free. We just hope we do not only get what we paid for.

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How Facebook Led us to Love IT: Student-Led Support in an Undergraduate Business Course.

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Abstract: This paper presents the experience and findings of a team of undergraduate students, who used Facebook to create an area for discussion between students and teaching staff. The context for this was an information systems module, for business and management students, where one of the learning outcomes was to gain an understanding or the use of social media. One team of students was assigned the task of using social media to facilitate the interaction between students and educators participating in the module. The university used a virtual learning environment (Moodle) to make course materials available online and to facilitate activities such as electronic submission of students' coursework. The task therefore extended to managing and reflecting on the interplay between Moodle and any social media that were used.
A Facebook group was chosen as the core platform for the exercise. Almost all of the students were already active Facebook users, so they were familiar with the etiquette associated with the platform, and were able to build it in to their everyday use of technology. Beyond setting the basic parameters and requiring the students to reflect on their experiences and submit a report, the lecturers involved had very little input in to the creation of this group, so it was student-led and the students felt a sense of ownership. To create a critical mass of use of the group, some of the students transcribed questions and comments which had already been posted to the relevant Moodle page, to the Facebook group so that two distinct virtual spaces (one student-owned and one university-provided) could be used in tandem with each other. The students carried out their own evaluation of the Facebook group, including circulating questionnaires and interviewing, in some depth, the lecturer who was the module leader for this subject. As a result they uncovered some worthwhile insights into the benefits and limitations of using social media in such a context. For example students valued the simplicity of just being able to 'like' a contribution without being expected to add further discussion. They found the integration with the same social platform that they used for much of their everyday life useful, and yet when asked whether they would be attracted to an environment where Facebook became their primary mode of communication with the university, and where it possibly superseded Moodle or any equivalent, most of them valued the continued provision of Moodle or of a close equivalent. For the participating students this also proved a useful exercise in implementation of an IT project, and in creating an environment, using technology, where worthwhile discussion could take place. This led directly to attainment of one of the intended learning outcomes, to gain an understanding of social media, while at the same time providing a useful resource for a whole cohort of students.

Keywords: Facebook, business students, undergraduate, student-led work

1. Introduction

This paper reports on a collaborative exercise where a group of undergraduate business studies students at a British University were invited to contribute to the process for electronic communication between students and lecturer. The exercise was located within an information systems module where one of the aims was for students to gain experience in using Web 2.0 tools, and to reflect on these experiences.

These students were given a fairly broad brief within which they could choose their own approach to using Web 2.0 tools. In practice the students suggested that the most effective course of action would be to set up a dedicated Facebook page in parallel with the Moodle virtual learning environment (VLE) provided by their institution. This afforded the opportunity to compare students' use of the two platforms for discussion. As such it also related to an area of discussion that is topical in terms of course design and delivery: as social networks such as Facebook become increasingly familiar as platforms upon which students conduct their social interactions, would it be appropriate to place increased reliance on them for support of their studies, and could a social network in fact supersede a VLE?

One explicit objective of the coursework exercise was to give students experience of implementing some sort of IT project. Although on a small scale, they needed to plan and specify their use of social media, investigate user requirements, and to achieve all this while working cohesively as a team.

Within the business studies course, this took place against a backdrop of changing perceptions of information systems, and IT management as a discipline. A decade earlier, in the aftermath of the dot.com boom and bust and in the early days of large-scale electronic commerce, this was perceived as an important and 'cool' subject for business students. By 2013, within this group at least, attitudes to the subject became polarised.

Representing one viewpoint, one student (not a member of the group working with the Facebook assignment) based her very high level of enthusiasm for the subject on its direct relevance to her work placement with a company providing the infrastructure for wireless networks, and to the insight that she gained through her studies into the strategic implications of emerging technologies. Conversely one student used the word 'drivel' in student feedback to refer to the theoretical underpinnings of information systems that were taught to this cohort. Of course these are individual responses and should be treated with extreme caution when taken in isolation, but they are consistent with the impression gained by the lecturers that IT management had shifted from being a core to a specialised area.

Nevertheless the group tasked with managing staff/student interaction demonstrated a very high level of enthusiasm for the subject. Reflecting both their own energy level and perhaps a wish to go beyond the concept inherent in Facebook of 'like', they posted a group photograph, immediately after interviewing the module leader, explaining that they 'loved information technology'.

2. Technological and Institutional Background

The thinking behind the assignment, within which students assumed responsibility for communication between staff and students, was to involve students actively in a process of research. This was informed by action research (McNiff, 2013) which is recognised as a valuable approach both for education and for information systems. Participant observation is an element in action research, and by inviting the students to create the channels for communication between staff and students, they are being included as participant observers. The process was informed by a belief that students can usefully be active participants in reviewing the student experience and contributing to future developments of a course (Josefson et al, 2011). It could also be viewed as a process of co-creation between students and faculty: significantly this is an approach which Judson and Taylor (2014) advocate as a route for universities to maintain their role as providers of 'a public good'.

Because the use of social media in education remains an emergent subject, a case study approach based on the participants' informed reflections of their experience was deemed to be appropriate. Again following the principles of action research, the intention was that, from one year to the next, successive groups students could reflect on their experiences, and these would form the basis for the next group of students to participate in a similar exercise. In that way each year would constitute one cycle of action research.

Downes (2005) discussed the potential for increased use of standard social media tools as a basis for e-learning, as a substitute for specialised pedagogic software. By implication, he associates traditional pedagogic software, characterised in his terms as learning management systems, with the concept of learning objects, which in turn he associated with an earlier generation of computer-based training which in his view has been made obsolete by generations of applications on the world wide web. He was writing this at a point where web 2.0, in terms of web tools based around user-generated content and collaborative creation of material, was coming into favour and in fact his choice of 'E-learning 2.0' to denote his emergent view represents the then emerging terminology of web 2.0. Significantly, he sees this in the context of learning becoming more closely integrated into every aspect of life than has been the case in the past, and at the end of his essay suggests that 'learning and living… will eventually merge'. So predictions of the demise of the learning management system, analogous to the VLE used in the institution discussed in this paper, have existed for some time. But this one has been in the context of the decreased importance of traditional learning institutions, which raises questions of whether the VLE should remain important for full-time students on a business studies course.

However the idea of a personal learning environment (Wild et al, 2008) as something more closely tailored to an individual student's requirements, and possibly based on a combination of readily available electronic tools, has gained some currency over the years. Within the arena of web 2.0 the 'mash-up', within which data from more than one source can be combined with a range of tools which allow it to be presented and interpreted, is an essential concept and this can be brought to bear on a pedagogic environment through the use of multiple tools in tandem with one another. Social media such as Facebook are now recognised as a component in the use of technology to support learning and to adjust this to suit individual learners' requirements (Dabbagh and Kitsantas, 2012)

White and Davies (2011) represent a strand of thought which applies personal learning ideas to the environment within a traditional, established, university. They advocate what might be termed a 'lightweight'

approach affording a high level of adaptation and flexibility to suit individual students' requirements. Their approach did in fact retain a conventional institutional VLE but with the recognition that this was just one of a range of technologies available to support learning.

Junco (2011) has extensively researched the use, quite specifically, of Facebook by students. He discusses it specifically in terms of student engagement and is cautious of drawing conclusions which might indicate any causal relationship between Facebook use and educational outcomes. With this proviso, he observes that there is a correlation between both Facebook use and more specific Facebook activities and engagement among students. While this could simply reflect that many students use Facebook and that those who are outgoing and engaged in Facebook are also outgoing and engaged in their learning, it is presented as an argument for educators to take Facebook into account in their activities.

The current paper discusses an initiative that took place in the spring of 2013 (the timing is noteworthy in the light of the pace of change in the use of social networks) and the students participating were in the second year of a full-time undergraduate business studies course. While the benefits of building an element of electronic discussion into a course are well established (Goodyear et al) the level of electronic support provided to these students varied considerably between different subjects.

The institution within which this exercise took place had made a continuing strategic commitment to the use of Moodle as a VLE, and this happened at a stage when the educational development staff within the institution were concerned with the migration of material from one well-established version of Moodle to a newer one. One observed shift within the institution was away from a context where students were somewhat resistant to placing much reliance on electronic resources (because they had explicitly chosen a full-time course and did not want to be palmed off with something that could feel like a distance-learning course) to one where, even when students were based at the university and were diligent in attending lectures, they expected to be able to find a lot of supporting material on-line, to the extent that any subject not documented on Moodle would not be regarded as part of a course.

3. Implementation of the Facebook Group

The students chose, as a way to enhance communication and collaboration between staff and students, a Facebook group in tandem with the existing tools offered by Moodle. The two most important steps taken to set this up were:

- Creating a Facebook page specifically for their subject lecturer in role as leader for this area (fortunately the lecturer did not already have a Facebook page using their university email address for contact, so there was no issue around duplicate pages) and then presenting it to the lecturer as a working and functional page

- Creating a group for the information systems lectures, and copying a range of announcements and queries which had been posted using Moodle, and which might be of interest to this cohort of students, so that there was a continued incentive for students to track activity within the group

Facebook was chosen because of its familiarity and because of its widespread use by students: in fact out of a cohort of over 100 students within the 2nd year of undergraduate courses at the institution who were in contact with the students implementing the group, only one specifically avoided using Facebook.

Once the group was in place, the students who had set it up monitored it and promoted its use by inviting the participants in the information systems module to join. Most significantly, they ensured that when an important piece of information was posted to the group, one or more of them would highlight it by indicating a 'like', and it rapidly became apparent that the ability to respond quickly and tersely to a posting was highly valued by students. Facebook items are also flagged with the number of people who have seen them, so it is easy for participants to get a sense of whether their input has in fact had any effect.

In addition to the student and staff participants in the group, an administrator for the group was created with their own distinct identity. This allowed announcements – often transcribed from Moodle – to be posted and seen as originating with the administrator and not with any particular student or member of staff.

While the Facebook group was used by many students in the run-up to an exam related to the subject, there was no sense of it superseding either the use of Moodle or of emails communication directly with the lecturer. Also it was notable that much of the traffic on the Facebook page visibly came from participants using mobile

devices, so the students who co-ordinated the page positively encouraged the feature where a contribution could be identified as coming from somewhere around a particular geographic location.

The Facebook group was also used to publicise video lecture capture of certain revision sessions – so for example 'lecture capture video of the revision session that I did this morning is now available' was posted to Facebook, along with a screen shot showing students how to load up the lecture capture within the Moodle system.

Because the implementation of the Facebook group was positioned as a coursework task, the students were expected to carry out a measure of analysis and evaluation. In the event the evaluation of the group as a systems development task was very straightforward. The students already understood Facebook very well and it was a straightforward task to create a group which was not dissimilar to others that they had worked with before.

Evaluation of the group's use was a different matter. The students interviewed a small number of students within the broader cohort, to ascertain their responses to the Facebook group, and subsequently interviewed the lecturer responsible for the subject. In parallel with this they carried out a simple poll to elicit students' relative responses to Moodle and Facebook.

Additionally the students had the opportunity to meet members of the university's central team concerned with educational development and strategic use of the VLE, but this was less in the context of the students interviewing staff and more in the context of exploring opportunities to continue a measure of joint development of educational resources.

4. Findings and Discussion

Findings and reflections on the experience are discussed here at two levels. One is to do with the educators' perspective and the pedagogic value of the activity as part of a business studies course. The other is to do with the students' findings and observations, especially in the light of privileged access that they could have attained to the views of their peers, and the students own role which arguably placed them in the position of participant observers.

From the educators' perspectives, the benefits were visible but hard to measure. Facebook provided a valuable channel for discussion, and the Facebook group created at least the perception of an engaged group of students. Evidence for this included, not only the level of use of the group, but a significant number of occasions on which students answered questions from their peers before staff were able to do so. Some of these were purely functional and practical, such as 'when is the revision session?' or 'how do we submit our work online?' but there were also significant discussions about course materials and their theoretical underpinnings. For instance a question about the notion of high tech and high touch elicited a response from a student, who correctly suggested that it was about new technologies and 'the way that people connect, communicate and share', which was in turn followed up by an observation from the lecturer. Each entry in this dialogue was 'liked' by the same few people, which created a sense of continuing momentum and enthusiasm.

The tone of discussion within the Facebook group was generally polite, informal, and constructive. Whatever doubts the students might have raised about the relevance of information systems as a subject were largely ignored within the group, which was purely focused on understanding what students needed to learn about the subject. Furthermore, at the meeting between the students who set up the group and the university's educational developers, the students were keen to contribute ideas, not just about the channels for communication but about approaches to learning as a whole. In this way the students' 'ownership' of part of the learning process contributed to the creation of a productive and engaged learning community including both students and academics.

From the students' viewpoint, their own evaluation vindicated the idea of a Facebook group as a resource, but did not support the idea that it could be used in place of Moodle. Their most surprising finding, when they surveyed their colleagues, was that a slight majority (52%) were keen to retain Moodle or an equivalent as an official channel, even if in practice they preferred to use other channels for communication, and valued the ability to engage with lecturers using social media. Paradoxically, one of the dominant objections to Moodle from students was that it was perceived as over formal and 'corporate', but the same characteristics were cited as positive reasons for the use of Moodle. Students regarded the fact that it was 'more formal and

academic' as a reason to rely on it for information in connection with their studies, along with the fact that it offered 'separation of private and academic life'.

While not an overwhelming majority, the indication from the students' questionnaire is that to discontinue use of Moodle in favour of a learning environment based on Facebook would be, at best, a very risky move for the institution.

Among the quick survey questions included in the evaluation was one about the frequency of checking Facebook, Moodle, and the university's email system. Because students typically checked their university email more frequently than they logged into Moodle, the university email was perceived as a more accessible channel through which to obtain support. However email is an inefficient tool from the lecturer's viewpoint, because it can generate a whole series of separate queries, on the same subject, which need to be answered individually, and because these answers aren't shared with the group as a whole. The survey revealed that students checked Facebook more frequently than their university email, and as such Facebook has the potential to be a more immediate channel through which to deal with questions than email.

Other possibly unexpected themes in the students' inquiry were that Facebook was perceived as a quicker way to provide answers, perhaps reflecting that the participants in general checked their Facebook accounts much more frequently than they checked anything on Moodle. Conversely the students reported difficulty in publicising the Facebook group to all potential participants, despite making announcements in class and posting messages in the student-only areas.

Interview responses recorded by the students should be treated with some caution, since inevitably these are likely to be biased towards participants who are well disposed towards the project. However there were quotes suggesting that the tone of the discourse was valued by participants: it was 'really easy to access as everyone is very familiar with the use of Facebook' and 'pretty useful even though it is not very academic'. One respondent in particular mentioned a dislike of Moodle and valued the opportunity to deal with academics through other channels: 'I don't like Moodle personally and I found it really interesting that we could interact more with the lecturer'

Several interviewees contrasted the ease of use and familiarity of Facebook with the perceived difficulty in using Moodle. One in particular suggested the value of Facebook's immediacy 'with notifications appearing on your timeline'.

Reflecting on the interviewees' comments, it is important to distinguish between preferences in terms of which platform was seen as more user-friendly, and observations about the values of the two platforms. While there was an almost unanimous preference for Facebook as a usable tool, there was also a strong sense that both Facebook and Moodle had their purposes and that, even on occasions when there might appear some duplication between them, they were complementary as far as this cohort of students was concerned.

5. Conclusions and Recommendations

The key conclusions from the experience could be summarised as:

- There is value in encouraging academic staff and students to work collaboratively on projects such as this, in terms of fostering understanding and engagement, and building enthusiasm among students

- Facebook proved a popular platform for students to use for discussions with teaching staff, and the ability to 'like' an entry was extremely valuable in terms of generating sentiment quickly and in terms of encouraging people to look at a particular item

- Use of the Facebook page reached a significant level because the students who created it made a significant effort to generate a critical mass of content, which in turn encouraged other traffic on the page

- While students appreciated Facebook and valued its ease of use and familiarity, they did not see it as a potential substitute for the VLE provided by the university and, despite a tangible undercurrent of dissatisfaction with the VLE among this particular cohort of students, there remained a sense that the VLE was still strongly valued as an official channel to use for dealing with academic staff

- These could easily be translated into recommendations for a similar module delivered in the future, notably to introduce a social media channel in tandem with a learning environment provided by the institution, and to take advantage of students' own efforts in setting it up and administering it

However it should be stressed that these are the experiences of one particular group of business studies students and may well not be replicated in other institutions or other subjects. Moreover the landscape within which this took place is an every-changing one. As observed above, the perception of information systems as a discipline has shifted, and also the particular social media technologies that are in favour are continually changing. So there is no certainty that conclusions observed now would still be valid in the future.

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Fact Checking the Fact Checkers: Online Verification Organizations and the Search for "Truth"

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Abstract: The explosion of information online has prompted "fact checkers," individuals and organizations who try to verify all this information. How are these online verification organizations set up? What are the mechanisms they use to fact-check claims? Are they nonpartisan or unbiased in their analysis? Do they even claim to be? This project analyzes some English language fact-checking websites in Canada, Great Britain and the United States, seeking to answer these questions, exploring how each set of online verification organizations address a variety of issues. Preliminary conclusions: Online verification sites tend not to go into the depth they promise in justifying their assessments of the relative truthfulness of the claims they target.

1. Introduction

In September 2004, CBS anchor Dan Rather presented a story about documents questioning then U.S. President George Bush's service in the National Guard. Within minutes blogs and other Internet sources were examining the memos, eventually providing evidence that the documents had been falsified. While this example played out principally by individuals in the blogosphere, there were also some organizations that played a role. As their primary goal, these web sites attempt to verify the claims made by politicians, pundits and journalists like Rather.

News organizations often participate in these fact checking regimes. National Public Radio and The New York Times, for example, regularly follow up on debates and other public candidate statements. New York Times reporter Richard Stevenson (2000) wrote, "An examination of the transcripts of the three [presidential] debates shows several instances in which the candidates made their points through the selective use of facts, fudging of details and, yes, fuzzy math." Journalists maintain that one of their primary goals is to find and disseminate the "truth." People are also conditioned to want to know the "truth." So, when we cannot find out for ourselves, we rely on third-party verifiers to help us. Sometimes these are journalists. Over the past decade, with the explosion of information online, another form of verifier has been born: fact checkers.

While some of these online verification groups are represented by media organizations, others are not. How are these organizations set up? What are the mechanisms they use to fact-check others' claims? Are they nonpartisan or unbiased in their analysis?

2. The Purpose of Online Verification

There are two ways to approach verification. The first is to confirm or deny a perspective that might manifest itself with bias. Bias can be difficult to discern. Nyhan, et. al. (2014) note that even when presented with facts that prove a person's position is incorrect, most people will not change their point of view. This approach is empirically testable for online verification: how does the online verification web site find the truth or falsity of a claim? How does that finding compare with others? Fact checking of this sort happens in a wide variety of locations and situations: publishing, medical research, military intelligence, etc. Lawrence and Schafer (2012) provide an example of this approach, identifying the findings of online verification web sites and comparing them to how traditional broadcast and print media cover the same topic: in this case, Sarah Palin's comments about "death panels" in President Barack Obama's health care proposal.

James Moore (2002) is an example of the second approach: that types of verification (in this age, on the internet) are about the process of searching for relative truth,[1] rather than whether the object (statement) itself is true or false. He argues that the overwhelming flow of data compromises truth. Media sacrifice the

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[1] While not the focus of this research, the author acknowledges that there is much philosophical discussion about the meaning of "truth."

intimacy of personal relationships of trust that can be built through daily interactions in business and society. People are inundated with data and images that appear to be true only to discover later that those images did not depict actual facts or events.

Truth is valued by the amount of time required to produce it and provide supporting evidence for it. The immense production of "information" may have swallowed up the production of "truth," defined here as verified or evidence-supported information. This environment leads to a different way of processing truth: statements, based on data, are required to be associated with reliable, reproducible observations. Before the explosion of network sources, people would ask others they trust; go to a book, reference text or, at times, news media; or possibly visit the location of an event to verify the "facts." Now, a variety of sources are just a click away, small "factoids" that begin to add up in people's minds toward a verification of the truth. But, Moore argues, it is actually this change in process that has caused the average truthfulness or reliability of data to decrease. (George, 2009: 148-149). However, mechanisms such as online verification sites that do the checking for us make it increasingly less likely for individuals to question what is placed before them.

The purpose of this project combines the two approaches: what is the process by which oneline verification sites use to find the truth of statements.

3. Understanding How Verification Web Sites Work

There are a variety of methods through which verification web sites might be analyzed, from case studies, both single and comparative, to a content analysis with a larger dataset (see, for example, Magdy and Wanas, 2010). In order to accomplish larger scale analysis, we need to find the underlying concepts through which we can analyze the data – whether they be multiple cases or big datasets. The single case study method will provide that foundation. To begin, Part I is a qualitative case study of a single issue addressed by online fact-checking organizations, analyzing their structure and the methods they use to check out information. From that, Part II will discuss the concepts found in that case, examining the structure and function of a broader range of online verification sites.

First, a taxonomy of online verification organizations. A variety of organizations and web sites claim to check the veracity of public statements. The basic search query "fact check" reveals a number of the organizations that might fit into the category of usable cases, including big name sites like FactCheck.org and PolitiFact.com, the two top results, respectively. The popular recognition of these names coheres with their top ranking among all listed fact check groups. Verification web sites belong to a variety of origination categories. They fall into three categories: 1) media organization affiliated; 2) university, think tank or non-profit affiliated; or 3) independent or unknown. While we are still analyzing, most we have found are associated with media organizations.

PolitiFact and FactChecker, for example, are created by and affiliated with formal news and media organizations, like The St. Petersburg Times and The Washington Post. Others are associated with universities and other non-profit organizations. Some of these claim to be non-partisan, like FactCheck.org, run by the Annenberg Center at the University of Pennsylvania. Others openly acknowledge – and embrace – a partisan affiliation. For example, unlike the fact checking sites that claim neutrality, non-bias, or "objectivity," sites NewsBusters.org and PoliticalCorrection.org exist specially to refute the purported lies or exaggerations made by opposing political parties. The subtitle for NewsBusters reads, "exposing and combating liberal media bias," while the "about" page for PoliticalCorrection declares its purpose of "comprehensively monitoring, analyzing, and correcting conservative misinformation."

Others like Snopes.com, claim to be unaffiliated or run by individuals. While Snopes is quite popular in overall traffic, is also falls in a category that is very broad-based, providing online verification of abducted children and rumors of tainted hypodermic needles placed in the car handles of unsuspecting motorists, in addition to the political focus of the research at hand. It is interesting to note that this site used to be called Urban Legends and its goal was simply to point out the insanity of believing everything one receives via email or reads online (Emery, 2009).

There is one caveat: some of these organizations consider themselves to be watchdog groups rather than fact checkers. That is, they have a target (a political party or a media organization) on which they focus their

attention. The purpose is to keep the target on its toes, rather than a broader goal of looking for the "truth." Yet, the activities and the processes seem quite similar.

Since these types of web presence are, for the moment, mostly in English, so are the examples below. The single case is a Canadian verification site: Reality Check: CBC Canada, chosen because it was a local issue and not as visible as the more well-known U.S. and British sites. The analysis will address: 1) the sources cited to support claims of true or not true (some include the category of "partial truth" as they evaluate statements); 2) the rationale by which the site explains its decision or, in other words, the explanation given for why the statement differs from what they found to substantiate or refute it; and 3) the overlap, if any, between sources and rationale.

This analysis should provide some insight into the validity of the claims these entities make and whether they are relying on other reliable sources It might also indentify some foundational concepts on which further research might be based.

4. The Role of Third-Party Verification Sites in Establishing Truth

Third-party verification web sites play a number of roles. The case study analyzes a specific topic. In this case, campaigns and elections provide a common event on which verification web sites focus their attention. Through a comparative analysis, identifies the roles (the analytical concepts) that these web sites might play. First, they provide insight into how the traditional media critique and/or embrace this type of truth-seeking. Second, verification sites provide commentary a context for what and how we understand what is true and false. Finally, based on Moore's theory, there is a nuanced presentation of what "facts" are and how the explanations and narratives of what they might be play out on these sites.

PART I: Case Study

Issue Analysis

Verification web sites spend a lot of time parsing the words of politicians. While not always the case, election season is a clear place where politicians are more visible to citizens. It is also a time when competing perspectives and explanations may play a role in public discourse.

In October 2013, Nova Scotia held a provincial parliamentary election, which included a variety of parties and, therefore, a variety of perspectives. There were candidates from the Liberal Party, Progressive Conservative Party, New Democratic Party (NDP), Green Party and Independent. Liberals took 33 seats with 188,846 votes, Progressive Conservatives took 11 sets with 109,483 votes, and the NDP took 7 seats with 111,619 votes (Global News Halifax, 2013).

Before the election, journalist Brian DuBreuil of the Canadian Broadcasting Corporation (CBC), instituted a fact-checking program in order to monitor political exchanges between candidates. The site, which he called "Reality Check," takes controversial or questionable statements made by politicians or political parties and finds credible sources to refute the claims (CBC, 2013).

DeBreuil analyzed claims in political ads produced by the various parties. The project examined each ad (see Table 2) and asked the questions about source, rationale and overlap.

Table 2: Reality Checked Ads

No.	Ad Topic	Creator
1	"Are the Tory claims on job creation accurate?"	Conservative Party
2	"Are Liberal claims on wait times accurate?"	Liberal Party
3	Are Liberal ads on education cuts accurate?	Liberal Party
4	Are the NDP claims on new homes accurate?	New Democratic Party
5	Are NDP claims about new doctors accurate?	New Democratic Party

Ad 1: "Are the Tory claims on job creation accurate?"

Conservative Party leader Jamie Baillie stated that the party's plan was to create 20,000 new jobs over the next four years. Conservatives came up with the numbers by saying that they would cut taxes by reducing the harmonized sales tax (HST), cutting small business taxes and freezing power rates. Additionally, Baillie stated that every $80,000 in economic activity creates one job.

Sources from Reality Check:
The CBC quotes Donald Savoie, Canada Research Chair in Public Administration and Governance at the Universite de Moncton, stating that no politician can make that kind of promise about job creation with certainty, determining this claim to be false.

Rationale:
Reality Check thought this was a big promise and wanted to double check the math with economists who, it felt, have a better grasp on the issue than politicians. Ultimately, it came to the conclusion that job creation is not as simple as the Conservative Party proposed, making it an empty promise in their platform.

Overlap:
The CBC found an economist who supported its idea that the Conservative Party's concept of job creation seemed unrealistic.

Ad 2: "Are Liberal claims on wait times accurate?"

The three major political parties in Nova Scotia promised to reduce wait times for hip and knee replacements, a problem for the country's health care program. The CBC quoted Liberal Leader Stephen McNeil who stated, "The national average for orthopedic surgery is six months. In Nova Scotia it's 20 months. That is unacceptable." It also quoted the Liberal platform, which states, "According to the most recent data, nine out of 10 patients wait 20 months for a knee replacement and 17 months for a hip replacement."

Sources from Reality Check:
In order to combat these claims, the CBC cited a primer on how government health agencies track their numbers. They also looked at how wait times have changed since the NDP took power in 2008, but noted that wait times vary by hospital.

Rationale:
The CBC was curious as to whether the wait times were as long as the politicians claimed. It turns out that some patients in Nova Scotia do wait 20 months for knee replacements, but less than 10% of patients have to wait that long and 20 months is the longest possible wait time. Approximately 50% of patients receive their surgery within 7.5 months. For hip replacements, the numbers are even better, 50% have their treatment within 5 months.

Overlap:
Politicians were using the most dramatic numbers to make their point. Only a small percentage of people actually experience these extreme wait periods for knee and hip replacements.

Ad 3: Are Liberal ads on education cuts accurate?

A Liberal ad about NDP-sponsored government cuts on education claimed that the party cut $65 million from Nova Scotia classrooms, that Nova Scotia has the second lowest per student funding in Canada, and that the NDP had cut 700 teaching jobs.

Sources from Reality check:

- Figures for Statistics Canada for 2010-2011, actual per student spending, Nova Scotia is 3rd lowest not second lowest

- Department of Education and Nova Scotia School Boards: cut $34.8 million not $65 million

- Nova Scotia Teachers Union: the 700 education jobs cut

- Canadian Department of Education: number of jobs cut is actually 615

Rationale:
It appears that the Liberal Party got its numbers from sound sources and so the differences could be attributed to the time at which the fact checking took place, bureaucracy and lack of communication between organizations.

Ad 4: Are the NDP claims on new homes accurate?

If elected as the next provincial government, the NDP ad says it plans to create a new homebuyers rebate program. This program would qualify new buyers for a 50% reduction in the provincial portion of the HST (Harmonized Sales Tax) up to a certain amount and give buyers a $500 rebate if the new home has an EnerGuide (home efficiency) rating of 83 or higher. Rebates would be available for new construction beginning October 9, 2013, or later and will cost $10 million.

Sources from Reality Check:

▪ The Canada Mortgage and Housing Corporation to analyze what happened in a similar rebate program offered by the NDP in 2009

▪ The Nova Scotia Home Builders' Association which is in favor of the program and offers reasoning for why the 2009 plan was not effective.

Rationale:
The NDP's plan was similar to a program it instituted in 2009. It was not successful because of the recession, according to the Nova Scotia Home Builders' Association. The Canada Mortgage and Housing Corporation said home ownership dropped when the program began and went back up when the rebates ended in 2010. These organizations are not enthusiastic about the plan in the present stating, "The recent weakness in sales is largely attributed to flattening population growth, shifting demand towards apartments and minimal full-time job creation."

Overlap:
This was less of a campaign promise and more of a projection but it seems unlikely that the plan would be effective if it failed so dramatically in the past, even though it occurred during the recession. This article serves as a caution for endorsing something that will likely be ineffective.

Reality Check does not appear to fact check "truths," they instead emphasize "partial truths" and things that are "false." The site's bias is not towards any political party or ideological stance, but focuses on the problematic statements and promises that members of all of the parties make, attempting to give Nova Scotia's residents a realistic take on political jargon. While it appears to be politically unbiased, they seem to focus on the inconsistencies of the Liberals and the NDP more than the Conservatives, there is only one "reality check" about the Conservative Party ad.

Ad 5: Are NDP claims about new doctors accurate?
The NDP claimed, "Under the NDP, there are 400 more doctors working in Nova Scotia." That is, over the past four years under NDP leadership, there are more doctors in the province.

Sources from Reality Check:

▪ The College of Physicians and Surgeons of Nova Scotia said, at the end of 2008, 6 months before the NDP took power, 2,285 doctors were practicing in Nova Scotia. As of September 30, 2013 there were 2,531, an increase of 236 doctors, not 400.

▪ The NDP used an annual report from the College as of December 31, 2008, starting with 2,285 doctors. They then looked at the current membership on the college's web site and found 2,701 members making a difference of more than 400.

▪ The College of Physicians and Surgeons of Nova Scotia confirmed that the actual number of doctors is 2,531 not 2,701 making the NDP's claims wrong.

Rationale:
While it seems the NDP attempted to get its numbers from a credible source, it also appears that it attempted to skew the numbers in its favor, going off of membership lists versus the annual report for the most recent data.

Overlap:
The same sources were used to confirm, but the number was overstated.

PART II: Analytical Concepts

Response of Traditional Media

One study of a single case does provide some insight into how verification web sites do their job, but it does not provide a fuller picture of the impact of what they do. Traditional media response to the proliferation of fact checking organizations and pundits has been varied, and understandably intensified during election years. The *Wall Street Journal* identified 2008 as "the year in which 'fact checking' of political ads and statements became a full-blown journalistic fad" (Taranto, 2008). The subtitle of the article summarizes its take on the phenomenon simply enough: "It's opinion journalism thinly disguised as straight reporting." The very next year, the staff of *St. Petersburg Times* were awarded a Pullitzer Prize for National Reporting for the PolitiFact project, which had just completed a year of reporting on the 2008 election.

In a case of editorializing PolitiFact confirmed statements by U.S. President Barack Obama made regarding job growth, but then rated them "half true" (updated later to "mostly true"), because they claimed the president was implicitly self-attributing the growth. Additional reports by *Politico* and *The Weekly Standard* (Smith, 2011; Hemingway, 2011) have illustrated that fact checking conducted by PolitiFact, The Fact Checker, and The Associated Press alike have strayed severely into standard opinion journalism. But whether the universal nature of the fact checking phenomenon is linearly aligned to a particular ideological-partisan bias depends on whom you ask — or rather, who's (ostensibly) being attacked.

Ideology of True and False

When *Politico*'s Ben Smith called for "the end of fact-checking," he referred to a problematic conclusion reached by The Fact Checker: "Frankly, we are dubious that Biden actually said this. And if he did, he was simply echoing what another speaker said, in a private conversation, as opposed to making a public statement." Even without knowing the context of the issue at hand, the phrases employed make it clear that this declaration does not establish truth or falseness, as Smith points out. "Either he said it or he didn't. That's the fact to check here."

Unfortunately, a large number of the issues subjected to the rigors of fact checking organizations are simply not amenable to this kind of classification. Even PolitiFacts range of qualitative categories gives this away; the site rates statements "True", "Mostly True", "Half True", "Mostly False", "False", and the amusingly superlative "Pants on Fire!". Quite clearly these are *qualitative* categories, whose determination involves a qualitative analysis of the context, implications, and interpretations of statements made. There is certainly no logical degree of measurable difference between these categories. That is, at what threshhold does one know to move a statement from "Mostly True" to "Half True?" By counting the number of "true" words? This also creates challenges for comparing these categories across the different web sites and organizations.

Delineations: Fact and Narrative

The journalistic practice of fact-checking, before its popular characterization as a pursuit unto itself, was probably a more authentic means of determining fact, another point Smith makes in the piece. A story might contain details that checked out and were included, or others that did not, and were excluded initially or later revised. Though less sensational, this method is more similar to something scientific—scientific objectivism being at least one source of the general allure given to the modern idea of spin-free fact-checking. Mark Hemingway, who calls fact-checking projects, "The liberal media's latest attempt to control the discourse," nonetheless wrote a compelling scourge for *The Weekly Standard*, recalling that in the past, "Journalists at least paid obeisance to the idea of reporting the facts, as opposed to commenting on 'narratives'—let alone being responsible for creating and debunking them" (Hemingway, 2011).

That said, fact checking has always been a part of the journalistics process. An article that will be published is regularly vetted by editors and assistant editors. Sources are double checked, quotes are confirmed. But the online version of this has added a second definition to the meaning of the phrase: while the original source is important, others' statements and commentary can also be used to confirm (or deny) its authenticity.

The incompatibility of narratives and fact-checking is evident in some of PolitiFact's investigative journalism, which shows that context and interpretation are crucial to the analysis of a situation. But in one case, after situating the facts of a leaked tape that Julian Assange said demonstrated "collateral murder" by U.S. military, PolitiFact bluntly declares half-truth:

Who can say whether those in the Apache meant RPG when the crosshairs turned to two of the other men in the group -- not journalists -- and they said "he's got a weapon, too." Photographs suggest that it probably was a man with an RPG, and another with an AK-47 rifle. Still, the soldiers in the Apache reported, "Five to six individuals with AK-47s." That's what the permission to engage appears to have been based upon. RPG's were not specifically referred to by that point, but other "weapons" were. And so while Assange's statement is technically accurate, we think it leaves out critical context. And we rule it Half True (PolitiFact, 2010).

The proliferation of blogs and fall from grace of formal journalism is one of the conditions of possibility for a rise of fact-checking organizations. The anxiety produced by a democratized possibly less reliable production of content, alongside a popular characterization of large media institutions as biased or sensationalist has created the desire and market for fact-check organizations whose only bias is a principled take on truth and lies. The real motives, if initially inspired by the impulse for objectivity, have visibly digressed in PolitiFact's expansion to reporting on politicians'' consistency, by grading statements "No Flip," "Half Flip," or "Full Flop." In assessments of this nature, one can see that the neutral cataloguing of facts remains subordinate to notions of accountability, consistency, and honesty as a feature of personal character.

5. Conclusion

While there is just the beginning of online verification research, this project can make some observations about: 1) what these sites are doing; 2) how well these sites actually track an evidence-based version of the "truth" and 3) how much their claims of (non)partisanship are perceived. These sites are doing what they say their goals are: finding information they think is simply false and must be refuted with evidence or is misleading which can be dangerous. The problem comes in what might be referred to as the chain of evidence. Some, like Snopes for example, dig as deeply as they can, finding the original sources of the statements or claims – both online and offline – and going so far as to call people to discuss the details. Others find another online source or two and consider that substantive enough (Emery, 2009). The plethora of available information that these sites aggregate helps us, as Moore would say, since we don't have to do it ourselves. But, we may not question their sources.

A side note comes from the menu of "potential alternative explanations." It was clear that verification organizations don't try to verify every possible comment or statement available to them in the universe of political gaffes, misstatements or accusations. Instead, they may veer toward those moments that are visible, volatile or voyeuristic – or all of the above – simply to draw people for advertising reasons. In other words, what the sites are doing is finding ways to attract eyes and clicks. The harsh reading of this is that the substance doesn't matter as much as the circus surrounding it. While acknowledging that some of these organizations may play into this rationale (an most do it sometimes), we will focus the analysis on other things.

Second, these web sites exhibit varying levels of robustness, rigor and intensity at the effectiveness they show in tracking down evidence for their verifying conclusions. While some go to the "source" of the original quote or statement and leave it at that, others provide some evaluation of that source and its potential biases along with commentary. Again, this may not actually verify the veracity of the statement, but it can, as Moore said above, move beyond the factoids to some context and maybe better understanding. The one caveat here is tone. If the context provided feels partisan, accusatory or mean, it can detract from – rather than enhance – a tendency to believe that the statement has been verified.

Third, those verification sites claiming to be non-partisan do try to demonstrate balance in their content. But, this tends to come in the statements that they do the fact checking on, rather than the actual fact checking

itself. In other words, a site may go out of its way to analyze statements from both the right and left, but their conclusions about the relative veracity of the statements may still seem to favor one perspective or another. Some of the more polemical sites considered were created by partisan groups whose content is mostly reactionary, like NewsBusters.org, whose front-page subtitle reads, "Exposing & Combating Liberal Media Bias." These obviously live up to their claims.

But, for others that assert more neutrality – often those affiliated with news organizations – there is a more nuanced assessment. PolitiFact, for instance, was created by the *St. Petersburg Times*, which formally endorsed John Kerry in the 2004 presidential elections, Barack Obama in the 2008 election, and Mitt Romney among the primary GOP candidates, clarifying that "we prefer Romney's public record to his political record" (Editors, 2012). The presence of a political record does not seem to interfere with the neutrality of PolitiFact, though, which takes measures to avoid specific bias. They use both an "Obamameter" and a "GOP Pledge-O-Meter" track the extent to which politicians follow through on the promises made during political campaigns and fulfilled in office.

The Fact Checker blog, one of the highest ranked search results for "fact check," is sponsored by *The Washington Post.* The blog is operated mainly by political writer Glenn Kessler, who maintains that he is "objective" (Kessler, 2011). The blog rates the truth of statements according to scale of zero to four "pinocchios," where a blatant lie receives a rating of four. The ratings allow the site to quantify the relative truthfulness of statements made by Democrats and Republicans; in 2011, Democrats averaged 2.32 Pinocchios per statement assessed, while Republicans averaged 2.49. Nonetheless, the blog has criticized statements released by the Obama administration, and even provoked a rebuke in a White House blog post titled, "Fact Checking the Fact Checker" (Pfeiffer, 2011).

A final interesting characteristic is that most of these web sites function in fits and spurts: updating content during a newsworthy moment and then lying fallow for a time. Very few continually follow a broad range of political content, tracking down evidence for its verification.

Moore may be correct in his assessment of how these online verification services have changed the way citizens understand and accept truth. While it is not possible to comment on individual attitudes toward this process, it is clear that the process itself is contributing to a dialogue on why things are framed the way they are, at least among the groups who participate in those conversation.

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The use of Facebook and Twitter During the 2013-2014 Protests in Ukraine

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Abstract:The Ukrainian president's refusal to sign the cooperation deal with European Union sparked mass protests that engulfed Ukraine in December of 2013. The protests blocked the centre of Kyiv and attracted media coverage from around the world, later escalating in violent clashes with police forces. What makes these protests particularly interesting is the role social media played during the inception and organisation of the protest action. Characterized by high levels of protester self-organisation and extensive amateur reporting in the main social network services (particularly Facebook and Twitter), Ukrainian protests became not only one of the most massive European protest movements in the recent history but also the most social of all. Hashtags #euromaidan and its Ukrainian and Russian versions remained the main topic in Ukrainian internet segment for a long time and also were widely used and discussed in the Russian-speaking Internet, while Facebook updates were routinely quoted by Ukrainian and Western media. In the paper I assess the involvement of social media into the protests and describe the main ways Facebook and Twitter were used by the protesters by defining four main functions of social media at the time of the protests. For that, messages related to the topic of anti-government protests in Ukraine and published on Twitter and Facebook were collected and analysed. User-generated content from two months from 27th of November to 27th of January are used to assess the main trends in activity on the social networks as well as outline the main topics of the messages related to the protests. The patterns of use of the social media during the Ukrainian protests are similar in several important aspects to the way social media was used during the June 2013 protests in Turkey and earlier protests during Arab Spring. Facebook and Twitter main uses were: internal organisation, dissemination of news, mobilisation and external communication. Both initial protest gathering and organisation of supply for the camp were mediated through Facebook and Twitter messages. Twitter was also an important tool used to connect with foreign audiences and provide quick updates on situation during violent confrontation between protesters and the police.

Keywords: social media, protests in Ukraine, Facebook activism, Twitter activism

1. Introduction

Ukrainian protest action started after Ukrainian president Viktor Yanukovych refused to sign the Association Agreement with the European Union (EU) days before the planned December EU Summit in Vilnius. Shortly after the official announcement of the refusal to sign much anticipated deal, protesters occupied the central square of Kyiv, the Ukrainian capital. The central Independence Square is known as Maidán Nezalézhnosty (Майдан Незалежності) in Ukrainian; hence the protest movement was named Euromaidan. Protests remained peaceful until the night of the 30th of November when riot police Berkut violently dispersed the protest camp. This resulted in over 300 thousand people occupying the Independence square and central streets of Kyiv the next morning defying the ban on protests set by the government. On the 1st of December there was a clash between the protesters and security forces near the Administration of the President, which left several people injured, and was condemned both by the government and opposition's political leaders. The opposition initiated an indefinite protest and built a camp on the Independence Square demanding the Ukraine Government sign the European partnership deal. The situation quickly escalated after the 16th of January when the Ukrainian Parliament adopted a number of laws severely limiting the right to protest (BBC News, 2014). These laws produced public outcry and resulted in massive clashes in Kyiv on the 20th of January. Fighting between the protesters and riot police continued for several days and left six activists dead and many missing until the ceasefire was announced on the 23rd of January. As of the 30th of January 2014 the standoff continues and no definite compromise has been reached. These protests were the first violent political conflicts in the history of independent Ukraine and the first massive protest against the government since the Orange revolution of 2004 which led to the change of power but failed to bring improvement to Ukraine, which remained plagued with corruption.

This conflict is likely to become the topic of many research papers and articles in future, but some of the developments during the Ukrainian protests can already be analysed. One of the most fascinating properties of the conflict is the extensive use of social media by the protesters. Characterised by high levels of protester self-organisation and extensive amateur reporting in the social network services (particularly Facebook and

Twitter), the Ukrainian protests became not only one of the most massive European protest movements in the recent history but also the most social of them all. Hashtag #euromaidan and its Ukrainian and Russian versions remained the main topic in Ukrainian internet segment for a long time and were also widely used and discussed in both English- and Russian-speaking Internet. Many protesters, organisations and political activists used social media through the conflict. For this paper I gathered and analysed messages published on Facebook and Twitter during the two month period of the ongoing protests from 27th of November 2013 to 27th of January 2014, focusing on the content of the messages, their authors and intended recipients. Such analysis permitted me to outline and describe a number of functions the social media played during Ukrainian riots. Whenever possible I compare the social media aspect of the protests with that of the Arab Spring and more recent protests in Turkey.

2. Social media in Ukraine

Recent civil protests around the globe were marked by extensive use of social network services by the protesters. Analysing over 3 million twitter messages, YouTube videos and blog posts Howard et al. (2011) showed that social media played a crucial role in shaping the political debate and protests during the Arab Spring and helped to spread the information about the uprisings across the borders. In the countries with a lack or absence of open media, social media become a very important factor and helped create what Khondker (2011) calls the "cyber-civil society", a replacement for government-controlled media where the news is transmitted and shared among users of social media. During the June protests in Istanbul, social media was also widely used. Turkey, as opposed to Ukraine, has a comparable percentage of population using the Internet and social media (though almost double in absolute numbers). The patterns of use of social media during protests in Turkey differed from those of the Egypt or Tunisia uprisings in two important points: firstly most of the Twitter messages about the protests came from within Turkey (in contrast, only 30% of the most popular tweets during the Egyptian uprising originated from Egypt) and secondly most of the messages were in Turkish and thus directed to the country's population rather than foreign countries (Alexander, 2013).

One trait that was similar to all of the Arab Spring uprisings and Turkish protests was the opposition of social media in regards to the traditional media of the country. This was a particularly important trend of the social network usage by protesters in these cases and is also a crucial characteristic of the use of social media during Ukrainian protests. One important difference is that in Ukraine independent media existed and provided unbiased coverage of the events while in Egypt, Tunisia and later Syria amateur videos from protests were published by foreign news outlets as there was no local media available (Duffy, 2011). In Ukraine social media services were among the first ways to get initial information about the protests. A survey conducted among protesters by Olga Onuch showed that Facebook and VKontakte (VK) were named by 49% and 38% of respondents respectively as the sources from which they had learned about the protests. When asked about the reasons that made them participate in the protests, information posted on Facebook was named as important by 40% of all surveyed (Onuch, 2014). These data again confirms the significance of Facebook as the source of news during the Ukrainian protests.

One of the first evident trends of social media during the December-January protests was that Facebook was used much more actively than Twitter. Facebook pages more often contained original content and opinions and were predominantly written in Ukrainian, thus the target audience are the Ukrainians. Twitter messages however were more diverse language-wise: Ukrainian, English and Russian were all used actively in messages containing one of the Euromaidan twitter hashtags. This might be an indication of the different roles Twitter and Facebook play regarding the dissemination of information about the protests. Twitter is used more as a tool for communication with people from outside of Ukraine including both the general public of Western countries and politicians. Barbera and Metzger (2013) reported a spike in Twitter registrations after the protests were dispersed on the 30th of November with 1200 new members in the first two weeks of the protests. This trend is likely to be continued as the total number of tweets per day rose steadily during the month of January. Such an increase in the usage of Twitter shows the recognition of Twitter as an effective social media outlet for communication with the English-speaking community. This makes Ukrainian Twitter use patterns similar to those seen during the Arab Spring in Egypt and Tunisia, where Twitter was also used to connect with audiences outside the countries of the protests. "Twitter storms" created by the protest supporters to move the #DigitalMaidan hashtag to the list of most popular tags in Twitter and attract attention (Lokot, 2014), also confirm that protesting Twitter accounts are primarily focused on the foreign audience.

While Ukraine's Freedom House (2013) reported Ukrainian press to be partly free, major media are controlled and influenced by the politicians who either own them or represent the interests of businesses that own the media (Mykhelson, 2013). The Internet however remains a largely uncontrolled medium with little government intervention. For that reason Internet media is particularly suitable for the transmission of protest ideas and the organisation of protesters. Unlike the protests in Tunisia and Egypt (Allagui and Kuebler, 2011), the Ukraine state never attempted to block or censor the social media. Apart from hacking attempts on independent media and protest supporters (Gotev, 2013) (24tv, 2014) the Internet protest communication remained largely unaffected.

As of October, 2013 Ukraine has over 3,000,000 Facebook users (Watcher, 2013). Facebook is the third most popular social network in Ukraine after VK and Odnoklassniki (Kaspirovych, 2013). Twitter at the same time is not as popular with an estimated half million registered accounts, the majority of which are live in the capital (Twitter, Inc, 2013). Facebook and Twitter were two networks extensively used during the protests by the activists and their supporters. One of the reasons for Facebook and Twitter becoming the media of the revolution is that the two most popular social networks VK and Odnoklassniki are based in Russia and some people feared they could be influenced or even controlled by the Russian government. Such an idea might not be an overestimation considering previous conflicts between VK and the Russian government and the suspicious resignation of VK creator and CEO Pavel Durov after voicing support for the protesters in Kyiv (Toor, 2014). Generally in Ukraine Facebook is perceived as a kind of alternative network and many users who dislike VK network use Facebook, which is still is far from ubiquitous. Other popular social media platforms in Ukraine are LiveJournal and Blogger. Livejournal is a blogging platform of choice both in Ukraine and Russia. While many Russian political activists maintain an account in Livejournal, which often becomes a venue for heated political discussion, Ukrainian politicians tend to prefer Facebook and Twitter. For more information about the role of social media in Russian politics and controversies surrounding opposition LiveJournal blogs on that platform please see Meredith (2013) and Danilina (2013). There are also a number of other social media platforms maintained by major news portals and by some online newspapers that are used for the discussion of politics but were not popular enough to attract significant attention of the political activists.

3. The functions of Social Media During the Protests

In the course of my research I analysed updates published in 44 active Facebook accounts belonging to protesting public people, media as well as groups and community pages set up by Euromaidan protesters who posted regular updates on the topic of Ukrainian protests. Twitter was represented by 27 Twitter accounts belonging to activists, politicians and protesters and the messages tagged with popular euromaidan hashtags. A total of 12,310 Facebook posts and 5312 Twitter messages published since the 27th of November until 27th of January were aggregated to find common trends and outline the main uses for social media during the protests. Online ethnography method was used to classify the analysed messages into categories according to their content and describe the social media usage patterns. I established four main functions of social media during the Ukrainian December-January protests. In short these were the internal organisation, dissemination of news, mobilisation and external communication. I should note that these functions could not be viewed as definitive or mutually exclusive and that the same social network groups or profiles could be used for a variety of purposes. For example, accounts set up for supporting protesters might post news or important announcements and media used for disseminating news could also share the call for donations if needed.

In the research I abstained from the analysis of social media activity of the Ukrainian government and its supporters, firstly because the pro-government forces didn't establish any significant presence either in Facebook or in Twitter and secondly due to the fact that anti-Euromaidan movement was organised and controlled by regional government representatives rather than through self-organisation. Moreover it is likely that Ukrainian government didn't see any reason to use the social media for its purposes as it has largely controlled the traditional media and used it to disrupt protest action. So while Euromaidan protesters communicated through Facebook, Twitter and other social media, Ukrainian government had access to much greater audience in Ukraine using television and radio channels.

3.1 The use of Social Media for Organisation of Supplies And Protest Actions

Separate Facebook pages were created to help organise the necessities of the protest camp. Information ranged from the regular publishing of the list of required equipment to the regular updates with lists of missing activists to news about people transported to hospitals, arrested or taken by riot police. Due to the

harsh weather conditions especially in late January, people were often asked to donate warm clothes, shoes and linen to the Maidan camp. A special emergency twitter line @sosmaydan was established to inform the public about the most recent news regarding the internal organisation of the protesters. On the 24th of January a man was seriously injured by the police and the Euromaidan-SOS twitter page posted a call for blood donors. In several hours more than 200 people donated blood for the dying activist (pravda.com.ua, 2014). On another occasion the supporting twitter account was used to broadcast the news about an attack on the camp's medic staff that quickly brought about a stop to the attackers.

Successful organisation of funding was another important factor that allowed the existence of the Independence square protest camp. Financing the protester camp needs, streaming video and public television was organised with the help of the Internet as well and donation activity was quite high. Public television *Hromadske TV* managed to raise 461000 UAH (40000€) in the first 25 days of the fundraising becoming one of the most successful crowd-funding campaigns in Ukraine (Watcher, 2014). Unfortunately, information about the financing of the Euromaidan protestors is not so readily available.

3.2 The Dissemination o Tactical Information and News (Replacement of Traditional Media)

Information about the transportation of government-led forces was shared through social media and quickly propagated with the help of Facebook shares and Twitter retweets. A great amount of news was shared with the reference to "trustworthy source", "informant" or quoted as "unverified information". Even though this information was quite often untrue it served another purpose: maintaining the protester camp alert. Other important news shared through Facebook status updates related to the protest action in the provinces. Independent media like Hromadske TV concentrated their coverage efforts on the capital, while others like Ukrains'ka Pravda (Pravda.com.ua) were not capable of reacting to every development in the region. The scarcity of information provided by state-controlled media made Facebook and Twitter decidedly important ways to communicate the recent happenings during riots outside Kyiv.

To some degree social media was used to replace traditional government-controlled media by circumventing traditional media reporting and showing the situation from the point of view of protesting activists. In particular, web streaming was used to show protesters clashing with police forces in real time. The capability to watch the happenings non-stop and in real time enabled the spectator to be immersed in the riot violence and observe everything as it was happening, rather than watching news summaries with comments of the media. At the peak times 220 thousand users were simultaneously watching the streaming video (Provse, 2014). Hromadske TV devoted almost all of its time to the news and opinions about the riots, providing extensive coverage of the events. The audiences watching Hromadske TV and Spino.tv streaming from the clashes were comparable with those watching commercial TV channels (Povzyk, 2014). Similarly to what was observed during Arab Spring uprisings and June protests in Turkey, traditional media was replaced to some degree by the social media.

3.3 The Coordination of Protest Actions and Mobilisation

Facebook and Twitter were used to issue a "call for arms" among the protesters when possible danger occurred. Most of the warnings related to the possible arrival of Berkut police from other regions of Ukraine, regrouping of the government forces and requests to help the protesters at some problematic places for example police stations or hospitals where police tried to arrest the injured protesters.

Almost every night at least one of the leading Facebook activists stated, with a varying degree of certainty that a possible clean-up of the protest camp was approaching. Such messages became even more frequent after the conflict entered a somewhat more stable phase, sometimes generating panic responses from some users. Such reports were fuelled by frequent tactical displacement of police forces in Kyiv and announcements from more radical members of the ruling party urging the banishment of activists from occupied square and buildings.

Twitter was also actively used to issue directives and orders. Posting updates about attacks on particular activists, activist groups or protest camps allowed the active protesters to re-organise, quickly move their forces and get help where it was needed. Tweets about recent clashes with police and development both on Kyiv barricades and outside the capital were relatively common and also enabled the observer to get a very detailed picture of the happenings on the barricades and beyond.

3.4 Communication with Foreign Countries

Social media was actively used to inform foreign citizens and governments about the development of the protests. Special profiles were created to establish communication with the foreign agents, to provide information about the protests and also urge policy-makers from the EU and the United States (US) to impose sanctions against particular people in the Ukrainian government. A special Facebook group titled Eurolution.doc was created by Ukrainian political activist Oleg Bondar with the aim to translate documents, essays and speeches made by the political opposition and prominent Ukrainians. As of the beginning of February 2014, a total of 74 translations were available in nine languages (including Japanese and Gallego) (eurolution.info, 2014). Volunteers who responded to Bondar's call for translators completed this work. Apart from posting translations about the situation in Ukraine, Eurolution.doc encouraged the dissemination of information to foreign officials and the European and US media. The group also replied to the request of the German government to send evidence about human rights violations in Ukraine (Karacharova, 2014). The translations completed through this Facebook group were consequently published in several European newspapers.

Outside Kyiv and also Ukraine, a number of groups and pages were set up by protesters in the US, Europe and Canada. A total of 18 pages with more than 300 Facebook users were active as of the 30th of January with nine of these profiles created for protesters outside Ukraine. The most active foreign protest pages were the Euromaidan USA (2989 members), Euromaidan Canada (1619) and Euromaidan Brasil (1195), each containing not only news updates but also active discussions and organisation of protest action in the respective countries. There were also protests and meetings organised through the Facebook event system held in Ukraine, Spain, Austria, United Kingdom and across the US, with the Warsaw support event being the most populous (1978 Facebook users indicated that they "are going" to the event).

At the same time the protest communication with the Russian government was nearly non-existent. One reason for the absence of communication was that the Russian anti-protest official position was already known and later confirmed by the $15bn assistance the Russian Federation agreed to provide (BBC News, 2013). Furthermore, a great deal of information on the protests was already available in Russian. Ukraine is predominantly a bilingual country and many Ukrainian blogs are written in Russian rather than Ukrainian contributing to the Russian Internet segment. At the same time official Russian media generally showed biased coverage of Ukrainian protests, stressing the Eastern-Western, Russian-European controversy as the main source of the protests and condemning the protesters as anti-Russian and far-right nationalists.

4. Conclusions

From Africa and South America to Europe, online social networks are extensively used for self-organisation of the protesters, becoming one of the symbols of the 21st century revolutions. During the 2013-2014 protests in Ukraine, Social media played crucial role for the organisation and sustaining of the Euromaidan protests. Through the analysis of content generated by users in Facebook and Twitter, I outlined four main functions of social media during the protests: internal organisation, dissemination of news, mobilisation and external communication. Similarly to earlier protests in Turkey, Egypt and Tunisia social media in Ukraine partly replaced traditional media and were the main source of the information about the protests both within the country and outside. The most important aim of information campaign directed outside Ukraine was to persuade policy makers in the US and the European Union to issue sanctions against Ukrainian government officials and businessmen connected to the ruling political party. Within Ukraine social media was crucial tool for internal organisation and mobilisation of protesters. Twitter despite being significantly less popular in Ukraine was also often quoted and referred to. It was used by the activists to share the information on the most recent developments of the protest action during the clashes with the police forces and inform foreign audiences about the protest action. Just like during earlier protests, in Ukraine social media established itself as an invaluable tool for the anti-government protesters and is likely to play an important role in future protest action worldwide.

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Social Media: How Small and Medium-sized Enterprises Perceived and Used Them?

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Abstract: Some research has been done to investigate how larger businesses use social media to sustain the day-to-day operations of their businesses. The purpose of this study is to research, through a multiple case study, how small and medium-sized enterprises in Atlantic Canada perceive social media and how they use it to sustain their day-to-day operations. An additional purpose of this study is to examine the social media platforms used by these small and medium-sized enterprises to reach customers. Results from this research indicate that small and medium-sized enterprises in Atlantic Canada use social media to sustain their businesses in a variety of ways. Facebook is the primary social platform used by small and medium-sized enterprises as well as larger businesses. The Facebook page is usually developed internally, and the content of the information published on it is often chosen on the spot. They also use Facebook and their personal web site to reach current and potential customers in order to sustain their business.

Keywords: customers, small and medium-sized enterprises (SMEs), social media, travel and tourism industry

1. Introduction

Academic literature shows limited research in the areas of social media and Internet use in small and medium-sized enterprises (SMEs) in the travel and tourism industry. In Canada, particularly Atlantic Canada, SMEs' contribution towards a healthy economy has been recognized. SMEs are the fastest growing segment of the economy, and are considered the foundation of economic development (APECA, 2005; Mittelstaedt, Harben and Ward, 2003; Roffe, 2007). They are defined as businesses having fewer than 500 employees, and due to their great flexibility and adaptability, they represent the economy sector that creates the most employment (APECA, 2005; Brady, 1995). Yet, despite their great contribution to the region's economy, there are very few studies on them and even less on their use of social media.

This initial research of four businesses sets the stage for an expanded international investigation which will compare how SMEs in this sector are using social media and the Internet. Some of the most powerful tools used to influence customers and tourists in making decisions about what to purchase, when to travel, where to go, and other aspects of tourism currently come from social media. Social media, which has played an increasingly vital role in many aspects of our personal lives in the past few years, is now playing an increasingly crucial role in the travel and tourism industry. Customers and tourists are relying more and more on social media to make decisions about purchases and travel locally, nationally, and internationally. Because customers and tourists rely heavily on social media to make purchase and travel decisions, many businesses are finding it a necessity to use various forms of social media to make information available. (Regos, 2012; Travel and Tour World, 2013) This study explores the question: *How do small and medium-sized enterprises perceive and use social media to sustain their business?*

Capability development of small and medium firms remains critical to economic prosperity in Atlantic Canada as well as in other parts of the world (see for example ACOA, 2005; Jayawarna, MacPherson and Wilson, 2007; Roffe, 2007). Therefore, in order to be in a position to help them ensure their growth and their sustainability, it is important to know how they perceive and use social media.

The purpose of this study is descriptive. The first objective is to determine through a multiple case study how small and medium-sized businesses in Atlantic Canada perceive social media. The second objective is to find how they use social media in their day-to-day operations.

Thus, the remainder of the document is arranged as follows. Section 2 presents the method used for the article. Section 3 presents a literature census on social media. Section 4 determines, through a case study, how social media is perceived and used by SMEs in Atlantic Canada. The conclusion will be included in section 5.The references are in section six.

2. Method

The methodology used for this article includes a census of the literature on social media combined with a qualitative and exploratory research approach, i.e. multiple case studies giving the present state of knowledge on social media in SMEs. The literature census more specifically covers social media and its pros and cons. The case study method is well adapted in situations where theoretical propositions are few and field experience is still limited (Yin, 1994). A multiple-site case study allows one to understand the particular context and evolution of each firm in regard to the use of social media. Four SMEs located in the Atlantic Region of Canada, more specifically in New Brunswick, were studied. They were selected to be sufficiently successful (at least ten years in business) and representative in terms of industry and size for theoretical generalization purposes. These hospitality and tourism-related SMEs represent various sectors such as: restaurants, inn, hotels and bars. Following North American research (APECA, 2005; Mittelstaedt, Harben and Ward, 2003; Wolff and Pett, 2000), a SME is defined as having less than 500 employees.

Data were collected through semi-structured tape-recorded interviews, ranging approximately one hour and a half each, with the owner-manager or the manager of the SMEs interviewed responsible for social media. The interviews were conducted based on a pre-tested questionnaire and transcript. Interview transcripts were then coded and analyzed following Miles and Huberman's (1994) prescriptions with the assistance of the Atlas.ti application. For reasons of confidentiality, fictitious names were used to refer to the individuals and the firms participating in the study. For example, the first business interviewed is represented by the letter A, and a name starting with the letter A (Ann, Audrey) is given to the representatives of this business. The second business interviewed is represented by the letter B, and a name starting with a B (Ben, Bobby) is used, and so on. As presented in the research results section, these firms range in size from 9 to 30 employees and all of them were doing business throughout Canada and worldwide.

3. Literature census

In reviewing the academic literature, related terms about social media and how it is used to sustain SMEs need to be defined in order to form a foundation for discussion. While there are many textbook definitions of traditional marketing, marketing with social media is relatively new and moving through the growth stage of its life cycle. Consequently, its definition and platforms are evolving.

For example, Blackshaw and Nazzaro (2004) define social media as customer generated media which includes new sources of online information that is created, initiated, circulated and used by customers who educate each other about a wide range of issues. Mangold and Faulds (2009), social media is also consumer driven by enabling one person to communicate with literally hundreds or thousands of other consumers quickly and with relatively little effort. Managers cannot directly control these conversations. However they can use different method such as Facebook and Twitter to engage customers, and to influence and shape these discussions in a manner that is consistent with the organization's mission and performance goals. For its part, ACT-IAC (2011) defines social media as the collaborative use of technology to integrate social interaction and to create new content. This interaction gives more control to the consumer. However, the boundaries of authority (Milano, Baggio and Piattelli, 2011) and control (Oracle, 2012; Milano, Baggio and Piattelli, 2011) are becoming less clear. These definitions emphasize the fact that social media integrate social interaction in order to create content. Social media is now regarded as a medium of marketing by many businesses. It allows businesses to customize messages and make them interactive by involving the user in the construction of the message. As noted by Oracle (2012), consumers are helping businesses shape their brand by having conversation with others consumers that will ultimately affect the revenue of the businesses. Moreover, according to Trusov, Bucklin and Pauwels (2009), word-of-mouth on Internet social networking site has a strong impact on new customer acquisition and has longer carryover than traditional forms of marketing. Consequently, SMEs are moving away from traditional marketing to new forms of marketing via social media.

Social media and Internet have proven to be the most powerful tool in directing the mindsets of customers. The information they obtain through social interaction with reference groups and family members impact decisions such as what to buy, when to buy, where to go, when to go, how to go and which kind of activities to engage in (Cho and Kerstetter, 2004; Munar and Jacobsen, 2013).

There is a large number of social media that SMEs and others businesses can use in order to interact with their customers. In his study, Belvaux (2011) identifies 51 different social media. However, the most popular social

media platforms are Facebook, Twitter, LinkedIn, YouTube and Blogging (Blake, 2010, MarketingProfs, 2013; Nielsen, 2012; Oracle, 2012; Stelzner, 2013). The use of these most popular social media is commonly linked to specific industries. For example, Facebook is linked to cell phones, movies, restaurants, and travel industries and LinkedIn, for its part, to the advertising and publishing industry. Although, Twitter, LinkedIn, YouTube are among the most popular, Facebook has become in few years the largest (in numbers of users) and the most widespread (in geographical terms) online social network in the World (Milano, Baggio and Piattelli, 2011; Stelzner, 2013). To illustrate the popularity of Facebook over the other social media, when forced to only select one platform, 49% of marketers selected Facebook (Stelzner, 2013).

Research indicates that some businesses view social media as a positive and useful tool for their business. Stelzner (2013), mentioned that 86% of the businesses survey, in his report for the Social Media Marketing Industry, mentioned that social media was important to their businesses and more than 24% of SMEs have integrated social media in their marketing strategy. The fact that word-of-mouth referrals have longer carryover than traditional forms of marketing affects positively new customer acquisitions and can be linked to the number of new members subsequently joining the site is also a motivation for businesses to use social media (Trusov, Bucklin and Pauwels, 2009). These advantages are reflected by many comments made by bloggers. For example, Rogers (2013), a blogger for Fox News, shares a comment from one of her interviewees, "The beauty is that it [social media] is free. This helps build more followers and helps you reach different consumers." A different blogger noted "There could be no easier cost-effective way to market the captive social markets." and "A few months ago we started using Facebook and the results were fantastic, and in a few weeks our sales increased sharply" (Beesley, 2013). Finally, according to The marketing bit (2013) it can help smaller businesses outmaneuver their "Big Boys" competitors.

The top two benefits of social media marketing are increasing exposure and increasing traffic (Campbell, 2010; Stelzner, 2013). A significant 89 % of all marketers indicated that their social media efforts have generated more exposure for their businesses. Increasing traffic was the second major benefit, with 75 % reporting positive results (Stelzner, 2013).

While some SMEs, as others businesses, praise social media, others are skeptical and resistant. Research indicates that some businesses encounter problems when they want to use social media even if they see it as a positive and useful tool for their business. Mielach (2013) and Beesley (2013), observed some common excuses and reasons why small businesses barely used social media: "I don't know", "I'm too busy" , "I don't know which social media site is right for my business", "I tried it, but it didn't work", "I don't have enough updates to keep my site looking active". Lee and Wicks (2010) give other reasons. Businesses are not familiar with Internet-based technologies, and have not had sufficient opportunities to learn about and evaluate these dynamically changing technologies. The lack of funds to implement these new technologies was also indicated as a great constraint. Milano, Baggio and Piattelli (2011) also mentioned the lack of resources, poor technical competence and sluggish management as problems encountered by enterprises when they want to use social media or any type of information technology.

To counter these barriers, Beesley (2013) suggested training resources such as watching webinars, YouTube, and free online courses. The benefits of this training would provide low-cost marketing and increased sales. Oracle (2012) also suggests providing internal training sessions to employees if necessary.

Steps toward successfully using social media are, according to Beelsey (2013): choose the right platform, choose the right audience, and choose the right content. For its part, Oracle (2012), suggest to businesses that want to successfully use social media to first determine who they are and what they want to accomplish with social media, and then know their customers. This could be accomplished by listening and taking notes of what the customers want and what they are saying before starting to use social media.

Once businesses are connected with people through the social web, they have to map out their results. Businesses need to track membership/participation trends for comparison and evaluation. Businesses can use a monitoring tool to keep an eye on conversation unfolding in the social media, and they have provided feedback (Oracle, 2012). However, according to Stelzner (2013), only 26% of the businesses are able to measure their social activities.

4. Research Results

The study consists of four incorporated companies in the hospitality and tourism sector as shown in Table 1. These SMEs range from 9 to 30 employees and have a Canada wide and a worldwide tourism-related market. All of them have informal marketing departments. All of the four businesses interviewed have formal marketing budgets with an informal budget amount to spend for social media.

Table 1: Profiles of SMEs

PROFILES	SMEs			
	A	B	C	D
Size Numbers of Employees	30	25	9	10
Business Own. Incorporated	Yes	Yes	Yes	Yes
Industry Hospitality &Tourism	Inn & Restaurant	Hotel Restaurant	Inn & Restaurant	Inn & Restaurant
Geographic Market	Canada & Worldwide	Canada & Worldwide	Canada & Worldwide	Canada & Worldwide
Marketing Dept	Informal	Informal	Informal	Informal
Budget Marketing Social Media	Formal Informal	Formal Informal	Formal Informal	Formal Informal

The study shows that SMEs surveyed have a good understanding of what social media consists of and can explain what social media can do for their business. For example, Ben (B) says "*It is more efficient and more affordable. With Facebook you can send you message directly to your customers*". An increasing number of SMEs in Atlantic Canada seem to use social media in order to promote their products or services to current or potential customers and to increase their growth and their sustainability. In fact, in this study all the SMES contacted and the four SMEs selected for this study were using some social media in their business. However, they minimally use social media as Beesly (2013) argues.

Facebook (see Table 2) is the prominent social media they used which is consistent with what has been found by Blake (2010), MarketingProfs (2013), Nielsen (2012) and Sweeney (2013). The choice of Facebook by SMEs may possibly be explained by the comment made by Ben (B). He says "*This is the most popular and most effective platform for what we do*". The study also tends to confirm what is found in the Hubspot report (Blake, 2010), i.e. restaurant and travel industries tend to use Facebook as their social media platform.

Table 2: Social Media Used by SMEs

SOCIAL MEDIA	SMEs			
	A	B	C	D
Facebook	x	x	x	x
Twitter	x		x	
LinkedIn Mobile			x	
Blog				
Hootsuite				
Flickr				
Foursquare				
Gowalla				
Tweetdeck				
Others (YouTube)			x	
Web Site (Business)	x	x	x	x

The other social media most often used by SMEs is Twitter although the two businesses were using it minimally. One SME was also using LinkedIn as a professional networking and YouTube in order to put some

videos. None of the SMEs surveyed were blogging although blogs are considered among the most popular social media platform (Nielsen, 2012; Oracle, 2012; Stelzner, 2013). However, all SMEs had a web site and were using it conjointly with their Facebook page to promote their business.

All businesses developed the media platform they are using internally even though some had difficulties in doing so. For example, Ann (A) says "*I have developed our Facebook, It was quite easy*". On the other side Denise (D) says "*I have developed our Facebook, I was not too sure how to do it at first but I did it*". For her part, Carol (C) says, almost the same, "*We have developed our Facebook page last summer, it took us some time but we did it … we did it internally... we also have put some video on YouTube in order to show what we have and what we can offer".* Different reasons explain why the development had been done internally and not outsourced. The main reason is the lack of funds. Denise (D) gives an example why they did it internally. She said, "*We don't have a big budget for marketing... I have taken a course on Social Media and I have taught myself how to do it".* Another reason invoked to develop internally is the facility to use and develop the Facebook platform as Ann (A) stated, "I *developed our Facebook page. It was quite easy. I also learned by myself how to run apps on Facebook*".

Some SMEs seem to be more marketing oriented with the use of their social media platforms than others but not to the extent of larger businesses. Ben (B) gives an example, he says "*The choice of the content is on the fly… it has to be current and interesting to our customers… something we know that our customers are going to be interested in … something that will bring our customer here*".

It appears that the choice of content that will be published on the different platforms used by the SMEs is often based on the personal choices of the person in charge of the platforms and not necessarily according to a formal marketing strategy. Ben (B) gives us another example, "*I use my gut feeling; it is based on the upcoming events*." Carol (C) does the same. She says, "*It is in function of the events we want to promote*". Nevertheless, the objective of the content published on Facebook is to reach and attract customers.

As shown in Table 3, SMEs in Atlantic Canada use social media to reach their current customers and also to reach potential customers. In fact, during this study, all SMEs surveyed were using social media to reach their current customers and potential customers. This tends to confirm what Exabyzness (2013) is arguing, i.e. that social media is being increasingly used by SMEs to reach current customers and to attract new ones.

Table 3: Utilization of Social Media to Reach Customers

SOCIAL MEDIA	SMEs			
	A	B	C	D
Current customers Inform Educate	x	x	x	x
Potential Customers Inform Educate	x	x	x	x

The reasons invoked to use social media are mainly to inform current and potential customers of their products and services and to increase sales as shown in Table 4. Ben (B) provides us with an example of why he is using social media to inform his current and potential customers, "*It is efficient... The costs to use social media are reasonable… With Facebook you can send you message directly to your customers …* Traditional marketing, it isn't worth the cost; the return on investment isn't worth the cost for us. Traditional marketing does not allow us to reach our customers, it isn't worth it*".* Ann (A) gives us another example of how and why they use it to inform customers, " *We use the "apps" and the others products that Facebook offer.... We try to reach people outside the province as well as local customers… When we have special and other things like that, that's when we make the promotions on social media. There's also a contest we do every month on Facebook. … "* . Carol (C) says, "*Advertising in brochures, magazines and stuff like that doesn't work for us… with our Facebook and Web Page we can promote directly to our customers. Last summer, we have a customer who calls us to check if we have a room... 15 minutes later he was here…. He told us that he had found us on Facebook*". The reason Denise (D) is using it is, "*to generate sales … It brings us customers we would not have otherwise*". These tend to confirm Rogers (2013) and Beesley (2013), i.e. businesses increasingly view social media as a positive and useful cost-effective tool to reach different customers and generate sales.

None of the businesses use social media to educate their current or potential customers about their products or services.

The businesses interviewed are aware that they are not using social media to the extent they could or should, and they give several reasons to explain why. Carol says, "*Our season is really short and we have a lot to do during the tourism season …If I had the time, I would put more time on it, but we just don't have the time*". Denise gives us another example of why they do not use social media as much as they should or could, "*I'm pretty limited. I need to learn more about it. I don't know everything about Facebook and what I can do with it*". These reasons correspond to those advances by Beesley (2013), Lee and Wicks (2010), Mielach (2013), Milano, Baggio and Piattelli (2011).

When the question was asked about how they evaluate their performance in using social media either to reach current customers or to attract new customers, the businesses were not sure how to evaluate their results. Two SMEs mentioned that they were, once in a while, monitoring and comparing the growth of visitors on their social site (Facebook) to existing members at a precise date as it could be done according to Oracle (2012) and Trusov, Bucklin and Pauwels (2009). It also tends to confirm the findings of Stelzner (2013) regarding the fact that not too many businesses are able to measure their social activities. In Stelzner survey, 26 % (around one in four businesses) were able to measure their social activities. Nevertheless all SMEs surveyed were convinced social media were bringing them customers and they were satisfied with their use of it.

Even though the businesses do not really evaluate their performance in reaching current and new customers or if their use of social media has a positive impact on their revenues, they all agree the use of social media is a necessity today.

5. Conclusion

Four small to medium-sized enterprises (SMEs) were interviewed about their perception and use of social media. The firms are located in Atlantic Canada, Canada and have 9 to 30 employees. Facebook is the prominent social media they used followed by Twitter. One SME surveyed was using YouTube to promote their products and services. All SMEs were having a web site and were using it conjointly with their Facebook page to promote their business.

The choice of the social media platform is influenced mostly by the ease of use and affordability. All businesses developed the media platform they are using internally even though some had difficulties in doing so. Some SMEs seem to be more marketing oriented with the use of their social media platforms than others but not to the extent of larger businesses. The choice of content that will be published on the media platforms used by the SMEs is mostly based on the personal choices of the person in charge of the platforms and not necessarily according to a formal marketing strategy.

SMEs use social media solely to inform current and potential customers on their products and services, and to increase sales. They are aware that they are not using social media to the extent they could or should. Some of the reasons explaining that are lack of time, lack of knowledge on technology and on social media.

Even though the SMEs do not really evaluate their performance in reaching customers or if their use of social media has a positive impact on their revenues, they all agree the use of social media is a necessity today.

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The Importance of Social Media for Validating University Brands

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Abstract: As Higher Education Institutes (HEIs) face increased competition for research funding and high quality students, they are increasingly adopting managerial approaches, including more marketing and brand management activities. This study analyses the brands of 60 HEIs across multiple marketing channels, including hardcopy prospectus, website and social media. In particular the study assessed the consistency of the brand across the multiple channels. The findings indicate that while social media is important, brand personality consistency plays a significant role in moderating the relationship between social media and performance. The use of social media channels acts as the 'glue' holding together all communication channels and signifies what HEI brands communicate and whether other stakeholders agree.

Keywords: Brand Personality; Social Media; Higher Education; Brand Management

1. Introduction

Within the Higher Education (HE) sector, there is now increased national and international competition for students and research funding. This is leading to an increase in managerialism and new public management within the sector (Brown, 2011), and tools and practices traditionally used within the corporate sector are increasingly employed. Universities and Higher Education Institutions (HEIs) are now using marketing and brand management techniques to help target and recruit talented students (Chapleo, 2011). HEIs are also increasingly using social media tools, such as Twitter and Facebook to communicate with prospective students, current students and their alumni.

Brand management has traditionally been an area of research interest in the private sector. Much of the early work on measuring brands and brand value predated widespread corporate use of the Internet. As interest in online brands has increased, this has led to two main streams of research in this area: the first investigates the overall brand personality and the second considers online brand personality and website delivery. Although there has been some call for the need for consistency within a brand (Matthiesen & Phau, 2005), thus far the research in this area has been mainly anecdotal or based on single case studies. It is also acknowledged that transferring an existing brand to the Internet can be problematic (Rangaswamy & Van Bruggen, 2005), but again there is little research in this area. There is therefore a need for empirical research to assess whether brands are consistent across multiple marketing channels and whether this affects brand or organizational performance.

Another recent development is the widespread use of social media by organizations to communicate with their customers. Social media is designed to be consumed through interactions of a social nature, and is created to be widely available and scalable through the use of technology (Kaplan & Haenlein, 2010). Social media, on platforms including Facebook and Twitter, now represent an important part of a brand's online communication strategy (Owyang, Bernoff, Cummings, & Bowen, 2009). Organizations are using social media to cut the cost of their overall marketing budget, increase return on investment and ultimately increase their profit margins (Bernhardt, Mays, & Hall, 2012).

This research will consider the UK HEI sector. Within this sector, this research will investigate how brand consistency between traditional paper-based marketing channels, the website and an organization's use of social media affect organizational performance. The next section reviews the literature on brand consistency, brand management in the HE sector, social media marketing, and measuring HE performance.

2. Literature Review

2.1 Brand Consistency

Brand consistency is one of the three basic rules that every global brand adheres to when communicating brand qualities (Arruda, 2009). The literature widely agrees that a consistent brand image leads consumers to understand what the brand stands for and better predict its behavior (Erdem & Swait, 1998; Keller, 1999; Lange & Dahlén, 2003). Navarro-Bailon (2011) concluded that strategic brand consistency campaigns are more effective than their non-consistent counterparts. Arruda (2009) states that brand communications should be consistent regardless of the media chosen. This leads to higher levels of consumer-based brand equity (Pike, 2010) as part of the long-term strategy (Argenti & Druckenmiller, 2004; De Chernatony & Segal-Horn, 2003; Knox & Bickerton, 2003; Matthiesen & Phau, 2005).

2.2 Brand Management in HE

The brand promise, as communicated through its marketing media, must be delivered to stakeholders in terms of values that they recognize. Today, HEIs are able to utilize more channels than ever before, which can take the form of old and new media (Zailskaite-Jakste & Kuvykaite, 2012), such as the Internet via websites and social media. Pre-computer, the prospectus represented the first 'port of call' for prospective students and stakeholders. As developments in technology have progressed, universities have increasingly adopted and utilized new technologies as effective methods of communication. Communication now takes the form of the prospectus, website, social media, name signage and other associated components (Akotia, 2010).

2.3 Social Media and Branding

Social media increasingly represents an important part of a brand's online communication strategy (Owyang et al., 2009) as brands look to cut the cost of their overall marketing budget, increase return on investment and ultimately increase their bottom line. The literature suggests that whereas once social media (wikis, blogs, social and other content sharing) was an afterthought to brands (Eyrich, Padman, & Sweetser, 2008), it now represents a phenomenon which can drastically impact a brand's reputation, sales and in some cases survival (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). While the performance benefits of adoption and integration have been widely cited, research suggests that brands are unsure of how to manage their social media strategy and in turn achieve positive outcomes (Hanna, Rohm, & Crittenden, 2011).

Facebook and Twitter represent the two most popular (Hird, 2010) and distinct (Tagtmeier, 2010) platforms of social media. Facebook provides an interactive experience for organizations and individuals with multiple features: instant chat, networks, groups, like pages, news feeds, pokes, status updates, an inbox and a wall. Conversely, Twitter provides a more simplistic microblogging service that allows individuals and organizations to communicate what they are doing or reading with their followers. Further, Huberman (2010) concludes that Twitter can actually be used to predict future performance outcomes. Their research developed a model that could be used to predict box-office revenues for films before their release date, through the rate of "social media buzz." These results were shown to be more accurate than the Hollywood Stock Exchange. The largest demographic of Facebook users is of University undergraduate age, while Twitter also boasts a significant number of 18 to 24-year-old users (Hird, 2010).

2.4 Measuring Brand Personality

Aaker (1997) developed the first valid and robust framework for measuring brand personality. Aaker's (1997) framework of brand personality was based on the "Big Five" dimensions of human personality, which was adapted for use in the context of brands through filtration and the use of other marketing scales. It is designed for the use with Western brands and has been rigorously tested and validated in subsequent studies (Azoulay & Kapferer, 2003). Reduction analysis and confirmatory studies were used to test the model and arrive at the five dimensions of brand personality: sincerity, excitement, competence, sophistication and ruggedness.

Although there is now considerable research on brand personality, there has been little research measuring brand personality consistency between different marketing media channels and no research that links this with social media use and performance across a large sample of organizations.

2.5 Measuring HEI Performance

There are many ways in which an HEI can measure its performance, such as research output, financial statements and student performance. This research considers the effect of marketing communications and brand consistency predominantly on the potential student population, therefore it was felt that a good measure would be the demand per place by students. An institution's reputation is based upon how selective it can be in terms of student recruitment, reflected by UCAS metrics such as the number of applications per place available (Locke, 2011) or the average number of UCAS Points per student.

3. Research Hypotheses

The reviewed literature provides the basis for a conceptual understanding of how the relationship between multiple media channels, brand personality consistency and performance may relate. In this research, we predict that an HEI's use of Twitter and Facebook will affect their performance. However, consistency of brand has also been shown to be important for consumers to understand what the brand stands for and to better predict its behavior.   Our hypotheses therefore predict that an HEI's website and prospectus brand personality consistency will interact with their use of social media and performance. The hypotheses are presented and the theoretical framework is illustrated in Figure 1.

> **H1:** The level of "Website vs. prospectus brand personality consistency" will significantly interact (moderate) the relationship between the number of "Twitter Followers" and UCAS Demand performance.

> **H2:** The level of "Website vs. prospectus brand personality consistency" will significantly interact (moderate) the relationship between the number of "Twitter Tweets" and UCAS Demand performance.

> **H3:** The level of "Website vs. prospectus brand personality consistency" will significantly interact (moderate) the relationship between the number of "Twitter Following" and UCAS Demand performance.

> **H4:** The level of "Website vs. prospectus brand personality consistency" will significantly interact (moderate) the relationship between the number of "Facebook likes" and UCAS Demand performance.

> **H5:** The level of "Website vs. prospectus brand personality consistency" will significantly interact (moderate) the relationship between the number of "Facebook talking about" and UCAS Demand performance.
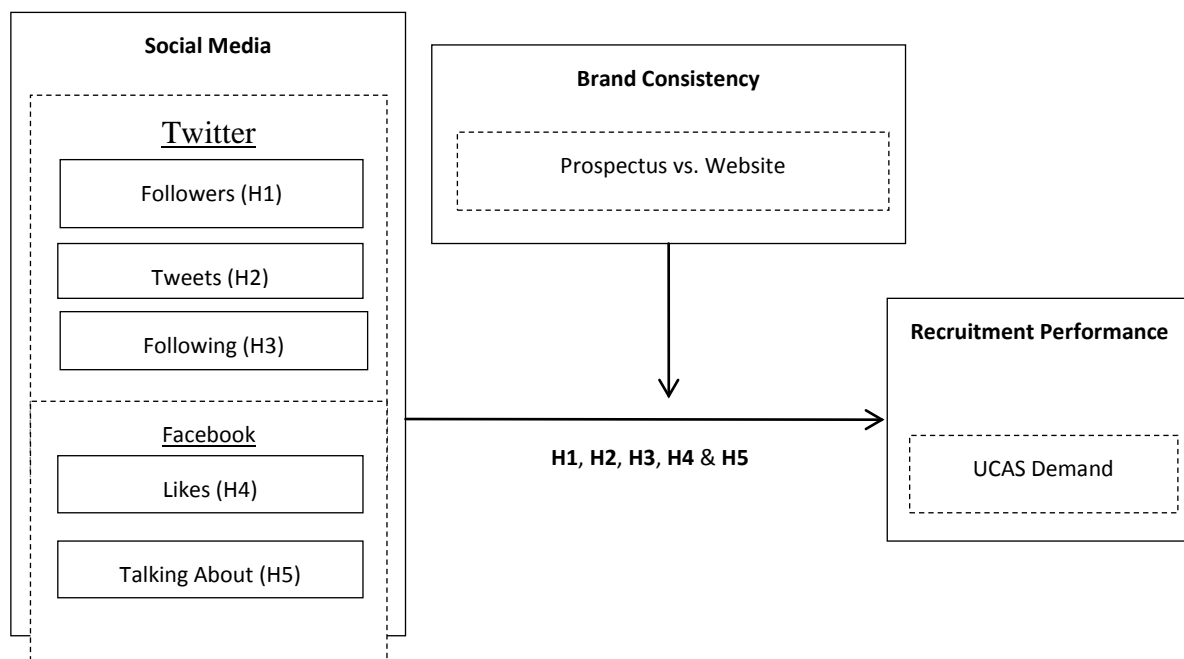

Figure 1: Theoretical Framework.

4. Data and Methodology

4.1 Sample

This paper analyses the moderating relationship of brand personality consistency between social media metrics and the performance of 60 UK HEIs. In order to examine this relationship, we utilize three marketing communication channels: the brand personality of the HEI prospectus and website plus the social media metrics of both Twitter and Facebook.

4.2 Procedure

Each HEI was contacted by telephone and a copy of their undergraduate prospectus was requested to be sent to the researcher via post. The document was then scanned using Optical Character Recognition software to transfer the paper-based text to a digital format. In the same timeframe, the website text was downloaded and social media statistics were gathered from Twitter and Facebook. In total this resulted in 18,152,070 words: 13,979,282 words from the websites and 4,172,788 words from the prospectuses. The words were then content analyzed to measure the brand personality being communicated via the text. The two channels were then compared to give a percentage measure of consistency between the two marketing channels for each HEI.

4.3 Brand Personality Consistency Measure

To measure brand personality, Aaker's (1997) brand personality dimensions were employed, as described in Section 2.4. Opuku (2006) has developed the method further by building a full dictionary of synonyms for each brand personality dimension, which can be used to assess online brand personality. Each personality dimension is associated with a list of related synonyms which are then accessed via the textual content communicated within marketing media.

Further analysis was conducted to ascertain whether statistical interaction relationships existed .The Student's t-test was used to ascertain whether brand personality dimensions across channels are significantly different, in which case they would be classed as inconsistent. Inconsistency was rejected at the 95% or higher level (p>0.05).

In order to ascertain whether overall brand personality strength consistency moderates the relationship between social media and performance, hierarchical multiple regression analysis was used to assess whether the moderating variable created an interaction effect. Simple slopes analysis was used to ascertain the significance of the interaction effect at different levels of consistency (high, medium and low).

5. Statistical Analysis

5.1 Hypothesis 1

Hierarchical regression analysis was utilized to test the interaction effect of *Website vs. prospectus brand personality consistency* upon the relationship between *Twitter followers* and *UCAS demand,* as shown Table 1. In the first step regression, *Twitter followers* was entered as a predictor of *UCAS demand,* yielding a significant effect (β = .392, p < .01). In the second step, *Website vs. prospectus brand personality consistency* was added as predictor of *UCAS demand* (β = .162, *p* = .199), while *Twitter followers* remained significant. In the final step, in order to test the interaction between *Website vs. prospectus brand personality consistency* on the relationship between *Twitter followers* and *UCAS demand*, the product of *Website vs. prospectus brand personality consistency* and *Twitter followers* was entered as an additional predictor. In line with our hypothesis, the interaction between *Website vs. prospectus brand personality consistency* and *Twitter followers* emerged as a significant predictor of *UCAS Demand* (β = -3.601, *p* < .001; R^2 change = .1565, F=13.173).

Table 1: Hierarchical multiple regression results of *Twitter followers* predicting *UCAS demand*: *Brand consistency* as interaction term (n=60)

Variable	*B*	SE *B*	β
Step 1: focal predictor			
Twitter followers	.015	.005	.392**
Step 2: moderation variables			
Twitter followers	.013	.005	.349**
Webs vs. pros consist	198.769	153.095	.162
Step 3: interaction term			
Twitter followers	.1436	.0362	3.795**
Webs vs. pros consist	7.035	196.601	.573**
Followers x consistency	-.14	.0386	-3.601**

Note: R^2 = .154 for Step 1 (p < .01); DR^2 = .1782 for Step 2 (p<.01); DR^2 = .3347 for Step 3 (p < .001)

* p < .05, ** p < .01

To further probe the significance of interaction, simple slopes analysis was used (West & Aiken, 1991). The interaction was plotted at three levels of frequency (60%, 80%, and 100%) of the interaction variable, as displayed in Figure 2. Upon probing this interaction, results showed a significant positive interaction effect (t = 4.42, p < 0.01) for HEIs that were the least consistent (60%), and also a significant positive interaction effect (t = 4.76, p < 0.01) for HEIs that were 80% consistent. The association between *Followers on Twitter* and *UCAS Demand* was not significant at the highest (100%) levels of *Website vs. prospectus brand personality strength consistency.*

In other words, as the *number of Twitter followers* increases, higher levels of *UCAS demand* are associated with higher levels of consistency. However, the interaction effect was not significant at the highest levels of consistency.

5.2 Hypothesis 2

Hierarchical regression analysis was utilized to test the interaction effect of *Website vs. prospectus brand personality consistency* upon the relationship between *Twitter tweets* and *UCAS demand,* as shown Table 2. In the first step regression, *Twitter tweets* was entered as a predictor of *UCAS demand,* yielding a significant effect (*β* = .471, p < .01). In the second step, *Website vs. prospectus brand personality consistency* was added as predictor of *UCAS demand* (*β* = .213, *p* = .067) and was nearly significant, while *Twitter tweets* remained significant. In the final step, in order to test the interaction between *Website vs. prospectus brand personality consistency* on the relationship between *Twitter tweets* and *UCAS demand*, the product of *Website vs. prospectus brand personality consistency* and *Twitter tweets* was entered as an additional predictor. Contrary to our hypothesis, the interaction between *Website vs. prospectus brand personality consistency* and *Twitter followers* emerged as a non-significant predictor of *UCAS Demand* (*β* = -.710, *p* = .491).

5.3 Hypothesis 3

Hierarchical regression analysis was utilized to test the interaction effect of *Website vs. prospectus brand personality consistency* upon the relationship between *Twitter following* and *UCAS demand,* as shown Table 3. In the first step regression, *Twitter following* was entered as a predictor of *UCAS demand,* yielding a significant effect (*β* = .286, p < .05). In the second step, *Website vs. prospectus brand personality consistency* was added as predictor of *UCAS demand* (*β* = .253, *p* < .05), which was significant, and *Twitter following* also remained significant. In the final step, in order to test the interaction between *Website vs. prospectus brand personality consistency* on the relationship between *Twitter following* and *UCAS demand*, the product of *Website vs. prospectus brand personality consistency* and *Twitter following* was entered as an additional predictor.

Contrary to our hypothesis, the interaction between *Website vs. prospectus brand personality consistency and Twitter following* emerged as a non-significant predictor of *UCAS Demand* ($β$ = -.309, p = .828).

Table 2: Hierarchical multiple regression results of *Twitter tweets* predicting *UCAS demand*: *Brand consistency* as interaction term (n=60)

Variable	*B*	SE *B*	β
Step 1: focal predictor			
Twitter tweets	.077	.019	.471**
Step 2: moderation variables			
Twitter tweets	.074	.019	.451**
Webs vs. pros consist	261.504	139.897	.213
Step 3: interaction term			
Twitter tweets	.185	.162	1.134
Webs vs. pros consist	410.302	256.352	.334
Tweets x consistency	-.135	.194	-.710

Note: R^2 = .208 for Step 1 (p < .001); DR^2 = .241 for Step 2 (p<.001); DR^2 = .234 for Step 3 (p < .001)

Table 3: Hierarchical multiple regression results of *Twitter following* predicting *UCAS demand*: *Brand consistency* as interaction term (n = 60)

* *p* < .05, ** *p* < .01

Variable	*B*	SE *B*	β
Step 1: focal predictor			
Twitter following	.054	.024	.286*
Step 2: moderation variables			
Twitter following	.053	.023	.284*
Webs vs. pros consist	310.863	150.286	.253*
Step 3: interaction term			
Twitter following	.111	.265	.590
Webs vs. pros consist	347.963	228.037	.283
Following x consistency	-.071	.327	-.309

Note: R^2 = .082 for Step 1 (p < .05); DR^2 = .146 for Step 2 (p<.05); DR^2 = .147 for Step 3 (p < .05)

* *p* < .05, ** *p* < .01

5.4 Hypothesis 4

Hierarchical regression analysis was utilized to test the interaction effect of *Website vs. prospectus brand personality consistency* upon the relationship between *Facebook likes* and *UCAS demand,* as shown Table 4. In the first step regression, *Facebook likes* was entered as a predictor of *UCAS demand* yielding a non-significant effect ($β$ = .055, p = .675). In the second step, *website vs. prospectus brand personality consistency* was added as predictor of *UCAS demand* yielding a nearly significant effect ($β$ = .254, *p* = 0.056), while *Facebook likes* was still non-significant. In the final step, in order to test the interaction between *Website vs. prospectus brand personality consistency* on the relationship between *Facebook likes* and *UCAS demand*, the product of *Website*

vs. prospectus brand personality consistency and *Facebook likes* was entered as an additional predictor. In line with our hypothesis, the interaction between *Website vs. prospectus brand personality consistency* and *Facebook likes* emerged as a significant predictor of *UCAS Demand* ($β$ = -12.085, p < .01; R^2 change = .1478, F=10.5198).

Table 4: Hierarchical multiple regression results of *Facebook likes* predicting *UCAS demand*: *Brand consistency* as interaction term (n=60)

Variable	*B*	SE *B*	β
Step 1: focal predictor			
Facebook likes	.000	.001	.055
Step 2: moderation variables			
Facebook likes	0.00	.001	.007
Webs vs. pros consist	312.422	160.053	.254
Step 3: interaction term			
Facebook likes	.0527	.0162	12.019**
Webs vs. pros consist	724.0031	1950737	.590**
Likes x consistency	-.0528	.0163	-12.085**

Note: R^2 = .003 for Step 1 (ns); R^2 = .066 for Step 2 (ns); R^2 = .213 for Step 3 (p < .01)

In order to further probe the significance of interaction, simple slopes analysis was used. The interaction was plotted at three levels of frequency (60%, 80%, and 100%), as displayed in Figure 3. Upon probing this interaction, results showed a significant positive interaction effect (t = 3.24, p < 0.01) for HEIs that were the least consistent (60%). There was also a significant positive interaction effect (t = 3.21, p < 0.01) for HEIs that were 80% consistent. The association between *Facebook likes* and *UCAS Demand* was not significant at the highest (100%) levels of *Website vs. prospectus brand personality strength consistency*.

In other words, as the number of *Facebook likes* increases, higher levels of *UCAS demand* are associated with higher levels of consistency. However the interaction effect was not significant at the highest levels of consistency.

5.5 Hypothesis 5

Hierarchical regression analysis was utilized to test the interaction effect of *Website vs. prospectus brand personality consistency* upon the relationship between *Facebook talking about* and *UCAS demand*, as shown Table 5. In the first step regression, *Facebook talking about* was entered as a predictor of *UCAS demand* yielding a non-significant effect ($β$ = .072, p = .584). In the second step, *Website vs. prospectus brand personality consistency* was added as predictor of *UCAS demand* yielding a nearly significant effect ($β$ = .251, p = 0.059), while *Facebook talking about* was still non-significant. In the final step, in order to test the interaction between *website vs. prospectus brand personality consistency* on the relationship between *Facebook talking about* and *UCAS demand*, the product of *website vs. prospectus brand personality consistency* and *Facebook talking about* was entered as an additional predictor. In line with our hypothesis, the interaction between *website vs. prospectus brand personality consistency* and *Facebook talking about* emerged as a significant predictor of *UCAS Demand* ($β$ = -6.278, p < .05; R^2 change = .084, F = 5.521).

To further probe the significance of interaction, simple slopes analysis was used. The interaction was plotted at three levels of frequency (60%, 80%, and 100%) of the interaction variable, as displayed in Figure 4. Upon probing this interaction, results showed a significant positive interaction effect (t = 2.36, p < 0.05) at HEIs that were the least consistent (60%), and also a significant positive interaction effect (t = 2.33, p < 0.05) at HEIs that were 80% consistent. The association between *Facebook talking about* and *UCAS Demand* was not significant at the highest (100%) levels of *Website vs. prospectus brand personality strength consistency*. In other words, as the number of *Facebook likes* increases, higher levels of *UCAS demand* are associated with higher levels of consistency. However, the interaction effect was not significant at the highest levels of consistency.

Table 5: Hierarchical multiple regression results of *Facebook talking about* predicting *UCAS demand*: *Brand consistency* as interaction term (n=60)

Variable	*B*	SE *B*	β
Step 1: focal predictor			
Facebook talking	.015	.028	.072
Step 2: moderation variables			
Facebook talking	.005	.028	.025
Webs vs. pros consist	308.429	160.075	.251
Step 3: interaction term			
Facebook talking	1.3378	.5678	6.257*
Webs vs. pros consist	541.303	.183.2059	.441**
Talking x consistency	-1.3444	.5722	-6.278*

R^2 = -.012 for Step 1 (ns); R^2 = .033 for Step 2 (ns); R^2 = .145 for Step 3 ($p < .05$)

* $p < .05$, ** $p < .01$

6. Discussion and Conclusions

This study was based in the UK and considered brand personality and consistency and social media use within universities at a single point in time.

Our findings showed that for brands with very low levels of brand personality consistency, *Twitter followers*, *Facebook likes* and *Facebook talking about* are associated with higher levels of *UCAS demand* and at medium levels the relationships are significant and marginally stronger. This indicates that the relationship between *Twitter followers, Facebook likes* and *Facebook talking about* and *UCAS demand* for highly consistent brands is more complex. Thus Hypotheses 1, 4 and 5 were supported; although there were mixed findings regarding the nature of the relationship at different levels of *Twitter followers, Facebook likes and Facebook talking about*. Hypotheses 2 and 3 were not supported, as the relationships for *Twitter tweets* and *Twitter following* and *UCAS demand* were non-significant.

These findings indicate that the number of *Twitter followers* and *Facebook likes* and activity can accurately predict student recruitment demand and that brand personality consistency plays an important role in moderating the relationship between consumer validation via these social media channels and performance. These findings will now be discussed in more detail.

Our results suggest a distinction between social media validation and social media interaction. Social media interaction, with a brand tweeting and following others is not a predictor of organizational performance. Social media validation however, in the form of number of followers (on Twitter) and number of likes and talking about (on Facebook), is a predictor of performance. Previous research has concentrated upon interaction and effectuation (Fischer & Reuber, 2011). Our findings show that validation from consumers is more important than social media interaction initiated by the organization or brand. Often brands that seem too good to be true will fail social validation tests (Hardey, 2010).

Our findings also suggest that although it is important that brands communicate well and consistently about themselves in hardcopy, on websites and through social media, it is also important to enable and listen to what consumers are saying about the brand through social media channels, such as Facebook and Twitter. This represents an important shift in brand management strategy (McNeill, 2012). Increasingly, techniques are being transferred from the private to higher education sector to strategise and protect a university's brand and reputation. Common brand management principles such as core brand value, internal brand mantra and overall social media strategy – are now crucial for a HEI's differentiation and positioning. However, whilst these findings indicate that consumer validation is more important than interactions initiated by the brand; this research did not examine mismanaged brand initiated interactions which can negatively affect a brand's

performance. Further, more research is required which links HEI brand management strategy to its successful execution and ultimately performance.

Social media provides a vital channel of communication (Dabner, 2012), in coordination with other communications. It provides cohesiveness and helps to hold together other brand communications (Interbrand, 2012). Our findings indicate that for brands that have been less well validated by social media followers and activity, brand personality consistency between their hardcopy and website communication channels is more strongly linked to performance. These brands can hide behind what they are communicating. Conversely, in the case of high levels of social media validation, the relationship is weaker. This suggests that if a brand is strongly validated it can be less consistent in its marketing communications, but still achieve high performance. McNeill (2012) argues that social media serves to protect a university's brand and reputation, acknowledging it has the potential to trouble institutions if mismanaged. However, while social media validation matters, if consumers validate a brand's claim, it is not necessarily a causal relationship with performance. It is more an indication that consumers accept and follow the brand.

Our findings highlighted the interaction followed an unusual pattern; the consistency to performance relationship is strongest in the case of a low *Social Media Validation*, weaker in the case of a medium validation and negative at the highest level of *Social Media Validation*. At a high level of social validation, the relationship between brand consistency and performance was weakest, indicating that in cases of strong brand validation through social media, brand consistency becomes less important. The nature of the moderation relationships support economics research which argues that as money is spent on marketing activities, a point will be reached at which the gains are either not possible or no longer worth the expense. This is also known as the law of diminishing returns (Hirschey, 2008). Marketing effort should be properly controlled, which is hard for organizations to balance in terms of how much precision they allocate to ensuring their brand is consistent across all marketing channels, as well as interacting on social media.

In summary, the seminal literature on branding has recognized brand consistency as an important research issue (Argenti & Druckenmiller, 2004; De Chernatony & Segal-Horn, 2003; Knox & Bickerton, 2003; Matthiesen & Phau, 2005), but until now studies have been either anecdotal or based on single cases. This research has been based on a detailed analysis of data from across 60 universities in the UK. The findings of this research support the literature, which argues that HEIs are using brand management techniques in a similar way to commercial brands, to varying degrees of success, and that significant relationships exist between the extent to which institutions manage their brand and performance.

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Application of Hofstede's Cultural Dimensions in Social Networking

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Abstract: Hofstede, Hofstede and Minkov (2010) said, "Culture is everything." Hofstede et al. (2010) claimed that culture acts as mental software, and influences all decisions, including technology usage. Yet a lack of studies exists in support of this generalised assertion. One potential test and measure of this statement by Hofstede et al. (2010) results in the examination of social network adoption rates within the framework of Hofstede's cultural dimensions. Three well-known social networking sites were chosen for this study: Facebook, LinkedIn and Twitter. A comparison that examines the percentage adoption rates globally within Hofstede's six dimensions of culture was performed, using statistical analysis. These results provided the basis necessary in order to determine if a relationship exists between culture and social networking adoption rates.The findings suggest a correlation between specific cultural values, some that differ across the three selected applications: Facebook, LinkedIn and Twitter. All three of the services examined revealed a strong relationship with indulgence and adoption rates. Other dimensions showed varying results across the three applications. Also observed was a noticeable lack of activity in certain dimensional values, these non-results also suggests a potential relationship between cultural dimensions and non-behaviours.

Keywords: Social Networking, Hofstede, cultural dimensions, LinkedIn, Twitter, Facebook, adoption rates.

1. Introduction

Hofstede, Hofstede, and Minkov (2010) said, "This dominance of technology over culture is an illusion. The software of the machines may be globalized, but the software of the minds that use them is not" (p. 391). This broad statement has implications for various aspects of technology usage, and asserts that a relationship exists between culture and technology usage. The extent to which culture may influence technology usage is not known.

One study that offers support to Hofstede's claim is the study by Sanchez-Franco, Martinez-Lopez, and Martin-Velicia (2008) observed different usage patterns per culture during web-based training. Sanchez-Franco et al. (2008) surveyed over 600 users and determined that cultural differences play a potentially critical role in "acceptance and use" (p. 597). Thus, Sanchez-Franco et al. (2008) concluded, "Cultural aspects need to be taken into account when developing online applications that are specifically intended for use by a global audience" (Ibid). This study examined two of Hofstede's six dimensions of culture: individualism versus collectivism (IVC) and uncertainty avoidance (UAI), thus raising questions about the remaining four dimensions.

When Hofstede et al. (2010) discussed Internet usage they addressed the sixth dimension, indulgence versus restraint. Hofstede et al. (2010) said that restrained countries tend toward "less use of e-mail and Internet for private contacts and fewer e-mail and Internet contacts with foreigners" (Hofstede et al., 2010, p. 297). This behaviour contrasts with indulgent countries, which Hofstede et al., (2010) observed tend toward e-mail and Internet usage "for private contacts and more e-mail and Internet contacts with foreigners" (Ibid).

The observations by Hofstede et al. (2010) and Sanchez-Franco (2008) with regard to Internet usage patterns lead to a more fundamental question: Do social networking adoption rates vary by any other cultural dimensions? This correlational study by Sample and Karamanian will examine social networking adoption rates within the framework of all six of Hofstede's cultural dimensions.

Geert Hofstede's cultural dimensions provide a well-known framework of operationalized data for usage in evaluating and understanding various behaviours. This operationalized data can be used for quantitative analysis when determining the existence of a statistical relationship between variables. Hofstede avails his data, for researchers in all disciplines, on his website. These same values are found in his various published books.

Presently, there exists a lack of recognized literature that examines the role of national culture in social networking adoption rates. The goal of this study is to determine the nature of the relationship between Hofstede's six cultural dimensions and the adoption rates of Facebook, LinkedIn, and Twitter in order to determine if a correlation exists. This study provides insights to each of these three applications and why each may appeal to different dimensional values.

2. Literature Review

A quick review of Hofstede's dimensions of culture is helpful in understanding cultural influences on behaviours. Hofstede et al. (2010) define six cultural dimensions; a brief explanation of the dimensions follows:

1. Power Distance Index (PDI) – Characterized by "treating people differently" based on group membership (Minkov, 2013, p.414).
2. Individualism versus Collectivism (IVC) - Defines the primary responsibility the societal member considers – the group or the individual.
3. Masculine versus Feminine (M/F) - Defines the relationship between societal members as a contrast between aggressive, masculine traits and nurturing, feminine traits.
4. Uncertainty Avoidance Index (UAI) - Measures the response of a society – fear versus curiosity – to the new or unknown.
5. Long-Term Orientation versus Short-Term Orientation (LTOvSTO) – Defined by the interval of delayed gratification.
6. Indulgence versus Restraint (IVR) - Deals with society's acceptance of freedom of self-expression.

Each dimension associates with very specific behaviours – e.g. low UAI associates with less precision (Hofstede et al, 2010, p.201). The three selected social networking sites also have different missions that could possibly appeal to users from cultures with specific dimensional behaviours. Therefore, these dimensional preferences may result in the user simply having a subconscious preference for one application over the other. Evans (2008) said, "Although much of our behaviour is unconsciously controlled, 'we' (conscious beings) are not aware of this fact and may live with an illusion that we are much more in control of our behaviour than we actually are" (p. 270). By examining the usage preferences by culture the researchers hope to determine that a correlation exists between cultural dimensions and social networking adoption rates.

Richter and Koch (2008) associated two functionalities in common with social networking: identity management and the ability to keep in touch with other users. Ellison (2007) noted a third feature: access to the list of connections. The differences between the method of implementation by application that allow users to both manage their identity and keep in touch with other users may appeal to different cultural groups. For example, group memberships are associated with Facebook and LinkedIn but not Twitter.

Richter and Koch's (2008), along with Ellison's (2007), noted features are common among the three selected applications: Facebook, LinkedIn, and Twitter. The mission statements to each of the three sites reflect the same general goal of wider communications, but each application uses wording that may appeal to one group of users over another.

- "Facebook's mission is to give people the power to share and make the world more open and connected" (www.facebook.com)

- "This mission of LinkedIn is to connect the world's professionals to enable them to be more productive and successful" (www.linkedin.com)

- "The mission we serve as Twitter, Inc. is to give everyone the power to create and share ideas and information instantly without barriers" (Moss, 2013)

All three applications were developed in the United States for global usage. LinkedIn is the oldest of the three applications, having been launched in 2003 (www.linkedin.com). Facebook was launched in 2004 (Wadhwa, 2014), and Twitter in 2006 (www.twitter.com). According to Twitter, over 70% of their users are outside the US (about.twitter.com). Facebook and LinkedIn have greater representation in the US, where the largest number of users is from the US (www.internetworldstats.com, www.socailbakers.com).

3. Methodology

The goal of this study is to determine if a statistical relationship can be correlated between the independent variable – culture – and the dependent variable – adoption rates of the applications. A correlational study was chosen due to the lack of studies in this area from which to build, and a need to observe the relationship between culture and social networking adoption rates. The correlational analysis may be used to provide evidence of a relationship between culture and social networking adoption rates. This study will rely on hypothesis testing for each of the six cultural dimensions. Because the tests must be decomposed to six individual tests, one for each dimension, the results will be placed into a truth table for final analysis.

This study also relies on statistical analysis of Hofstede's dimensional values data and national adoption rates of social networking programs Twitter, LinkedIn, and Facebook as reported on the websites www.internetworldstats.com, www.beevolve.com, peerreach.com, and seiocast.com. The website www.internetworldstats.com contains the Internet user adoption rates by country for 237 countries and territories worldwide as of 2012. In addition to the Internet user adoption rates, this site maintains the Facebook user numbers that will be used for this study. This studied relied on the most recent set of statistics, the June 2012 findings. The website www.socialbakers.com maintains user statistics by country for over 80 countries; December 2013 statistics were used for this study. Finally, Twitter statistics relied on joining together data from Beevolve.com (www.beevolve.com) and peerreach.com (www.peerreach.com) for 26 countries as of December 2013.

Hypothesis testing will be performed against the null hypothesis using the Spearman correlation due to the distribution of data. The non-parametric distribution of both control and variable data requires the use of Spearman rather than Pearson for the correlation method. In the event of insufficient sample sizes of data, the Mann-Whitney measure of central tendency analysis will be performed and the resulting probability values (p-value) will be tested to the 5% rule. Calculations are performed on the Vassarstats website of Vassar College This website is the accompaniment to Lowry's textbook *Concepts & Applications for Inferential Statistics.*

Facebook samples were collected for 63 countries. LinkedIn data were collected for 56 countries. Hofstede provided cultural value data for 78 countries across four dimensions and 96 countries across 2 dimensions. The cultural value data was obtained from the book *Cultures and Organizations* (Hofstede et al., 2010). The adoption rate was obtained by dividing the number of users by the number of Internet users in each of the countries.

Countries with a less than 20% rate of Internet users were not included. The largest amount of data was available for Facebook and LinkedIn. Twitter data was more difficult to obtain and the dataset was significantly smaller, thus it may be more prone to variations; inferential statistics that measure central tendency will be used for Twitter data. The list of countries, the dimensional scores, and the application's penetration rate among Internet users in the country are all presented in Table 1.

Table 1: Social Network Adoption Rates By Country

Country	% Pop. Internet Users	FB	LinkedIn	Twitter	PDI	IVC	M/F	UAI	LTOvSTO	IVR
Argentina	66.4	47.5	12	12	49	46	56	86	20	62
Australia	88.8	59.7	26.2	9.2	36	90	61	51	21	71
Austria	79.8	44.4	5.8	6.3	11	55	79	70	60	63
Belgium	81.3	57.9	20.75	Null	65	75	54	94	82	57
Brazil	45.6	66.1	17.48	5	69	38	49	76	44	59
Bulgaria	51	2.8	9	Null	70	30	40	85	69	16
Czech Republic	73	51.6	7.2	Null	57	58	57	74	70	29
Canada	83	63.5	30.5	7	39	80	52	48	36	68
Chile	58.6	96.8	22.1	Null	63	23	28	86	31	68
China	40.1	0.11*	0.7	Null	80	20	66	30	87	24
Columbia	59.5	64.3	11.3	10	67	13	64	80	13	83
Costa Rica	43.1	94.4	19.38	Null	35	15	21	86	Null	Null
Croatia	70.7	50.3	8.6	Null	73	33	40	80	58	33
Denmark	90	60.8	26.4	Null	18	74	16	23	35	70

Country	% Pop. Internet Users	FB	LinkedIn	Twitter	PDI	IVC	M/F	UAI	LTOvSTO	IVR
Ecuador	43.8	74.5	11.6	Null	78	8	63	67	Null	Null
Egypt	35.6		40.8	2	Null	Null	Null	Null	7	4
Finland	89.4	48.6	11.6	Null	33	63	26	59	38	57
France	79.6	49	12.2	4	68	71	43	86	63	48
Germany	83	37.5	4.1	1	35	67	66	65	83	40
Greece	53	67.3	12.2	Null	60	35	57	112	45	50
Hong Kong	74.5	75.7	14.4	Null	68	25	57	29	61	17
Hungary	65.4	65.4	5.7	Null	46	80	88	82	58	31
Indonesia	22.1	92.9	Null	19	78	14	46	48	62	38
Iran	53.3	33.1	2.2	Null	58	41	43	59	14	40
Ireland	76.8	60.2	28.1	Null	28	70	68	35	24	65
Israel	70	71.3	17.7	Null	13	54	47	81	38	Null
Italy	58.4	64	1.6	5	50	76	70	75	61	30
Japan	79.5	19.98	0.96	11	54	46	95	92	88	42
Latvia	71.7	26.3	Null	Null	44	70	9	63	69	13
Lithuania	65.1	48.7	6.9	Null	42	60	19	65	82	16
Malaysia	60.7	76.6	8.48	6.3	104	26	50	36	41	57
Mexico	36.5	91.5	12.6	8	81	30	69	82	24	97
Morocco	51	30.9	4.4	Null	70	46	53	68	14	25
Netherlands	92.9	48.5	29.2	11	38	80	14	53	67	68
Norway	96.9	60.7	20.2	Null	31	69	8	50	35	55
New Zealand	88	59.2	25.3	18.3	22	79	58	49	33	75
Panama	42.8	67.4	17	Null	95	11	44	86	Null	Null
Peru	36.5	86.7	17	Null	64	16	42	87	25	46
Philippines	32.4	88.9	6.19	4	94	32	74	44	27	42
Poland	64.9	33.4	3.4	Null	68	60	64	93	38	29
Portugal	55.2	78.3	24.5	Null	63	27	31	104	28	33
Romania	44.1	55.7	11.82	Null	90	30	42	90	52	20
Russia	47.7	11.7	3.1	4	93	39	36	95	81	20
Country	% Pop. Internet Users	FB	LinkedIn	Twitter	PDI	IVC	M/F	UAI	LTOvSTO	IVR
S. Arabia	49	45	Null	33	95	25	60	80	Null	Null
South Korea	82.5	24.8	1.74	Null	60	18	39	85	100	29
Serbia	56.4	82.2	7.4	Null	86	25	43	92	52	28
Singapore	75	72.6	29.5	Null	74	20	48	8	72	46
Slovakia	79.1	46.8	4.7	Null	104	52	110	51	77	28
Slovenia	72.1	50.7	Null	Null	71	27	19	88	49	48
Spain	67.2	55.6	16.9	14	57	51	42	86	48	44
Sweden	92.7	58.6	18.5	5.6	31	71	5	29	53	78
Switzerland	82.1	46.9	16.3	Null	34	68	70	58	74	66
Taiwan	75.4	75.5	3.35	Null	58	17	45	69	93	49
Thailand	30	88.1	3.55	7	64	20	34	64	32	45
Trinidad & Tobago	53.1	75.3	29.19	Null	47	16	58	55	13	80
Turkey	45.7	88.1	7.5	45.7	66	37	45	85	46	49
United Kingdom	83.6	62.4	26.5	12	35	89	66	35	51	69
Uruguay	55.9	88.7	17.8	Null	61	36	38	100	26	53
United States	78.1	67.7	37.8	11	40	91	62	46	26	68
Venezuela	41	80.7	11.5	41	81	12	73	76	16	100
Vietnam	33.9	34.3	2.1	Null	70	20	40	30	57	35

- Note: * China blocks Facebook so the Facebook rate was not included in the analysis.

The research question asks, "Does culture, as defined by Hofstede, correlate with social networking adoption rates?" Hypotheses: H_0: There is no statistical relationship (correlational or inferred) between culture and social networking adoption rates. The alternative hypothesis, H_1, states that there is a statistical relationship between culture and social networking adoption rates. H_{1A}, states that there is a statistical relationship between culture and Facebook adoption rates. H_{1B}, states that there is a statistical relationship between

culture and LinkedIn adoption rates. H_{1c}, states that there is a statistical relationship between culture and Twitter adoption rates. Tests will be performed separately for each of the three social networking sites.

Results of the correlational testing will rely on Cohen's effect size as the standard used to interpret the correlation coefficient, the r score, results (Cohen, 1988). An r score of 0.1 – 0.29 is considered a small correlation, 0.3 – 0.49 is considered a moderate correlation, and an r score greater than 0.5 is considered a strong correlation (Cohen, 1988). Cohen's effect size will be applied since behaviour is being measured. Mann-Whitney test results will rely on the 0.05% testing rule.

The adoption rates will be determined by dividing the number of service users by the number of Internet users in each of the countries. Countries that have less than a 20% Internet adoption rate will not be included in the study, as these results may not reflect the values of the overall country population. China will not be included for the Facebook results since RenRen is the social networking service used in lieu of Facebook and "is the most popular social networking site in China", while as of this date, Facebook.com is still an unreachable domain (Zhao & Jiang, 2011, p. 1130).

4. Results Figures and Tables

The results for Facebook show a strong correlation with indulgence, moderate correlations to both collectivism and short-term orientation, and a weak correlation to low power distance. No correlations were observed in the remaining dimensions; however these two dimensions showed an unanticipated degree of activity on the lower poles of the dimensions. Table 2 provides the results of the Spearman correlations for each dimension.

Table 2: Facebook Adoption Rates by Cultural Dimensions

Dimension	No. of Entries	Correlation Coefficient (Rho)	t-value	Degrees Freedom	Correlation Strength	H_0	$H_{1A (1-6)}$
PDI	**59**	**0.1471**	**1.12**	**57**	**Weak**	**Reject**	**Consider**
IVC	**59**	**-0.4163**	**-3.46**	**57**	**Moderate**	**Reject**	**Accept**
M/F	57	-0.0186	-0.14	55	None	Accept	Reject
UAI	61	-0.0056	-0.04	59	None	Accept	Reject
LTOvSTO	**63**	**-0.3407**	**-2.83**	**61**	**Moderate**	**Reject**	**Accept**
IVR	**62**	**0.6402**	**6.46**	**60**	**Strong**	**Reject**	**Accept**

The weak correlation with high PDI values provides minimal evidence to reject H_0 but this finding does not provide sufficient evidence to accept H_{1A1}. The IVC, LTOvSTO, and IVR findings are stronger and resulted in acceptance of H_1. Table 3 displays the truth table entries for evaluating Facebook results.

Table 3: Facebook Truth Table $H_0 H_{1A}$ test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
1	1	0	0	1	1

The results for LinkedIn adoption rates show a strong correlation to indulgence, moderate correlations to short-term orientation, and low power distance. Weak correlations were observed with LinkedIn adoption rates and individualism, femininity, and low uncertainty avoidance. Table 4 shows the results of the correlational analysis

Table 4: LinkedIn Adoption Rates by Cultural Dimensions

Dimension	No. of Entries	Correlation Coefficient (Rho)	t-value	Degrees Freedom	Correlation Strength	H_0	$H_{1B (1-6)}$
PDI	**56**	**-0.3702**	**-2.93**	**54**	**Moderate**	**Reject**	**Accept**
IVC	**56**	**0.2586**	**1.97**	**54**	**Weak**	**Reject**	**Consider**
M/F	**56**	**-0.196**	**-1.47**	**54**	**Weak**	**Reject**	**Consider**
UAI	**56**	**-0.167**	**-1.24**	**54**	**Weak**	**Reject**	**Consider**
LTOvSTO	**54**	**-0.3882**	**-3.01**	**55**	**Moderate**	**Reject**	**Accept**
IVR	**52**	**0.6308**	**5.75**	**50**	**Strong**	**Reject**	**Accept**

The results for LinkedIn diverged from the Hofstede distribution in every dimension. For example, in the UAI dimension the range of 80-89, indicative of fearful of the new, has the highest representation rate, yet the highest adoption rate for LinkedIn is seen in the 0-9 score, fearful of the new, low uncertainty avoidance countries. Similarly with the M/F dimension the greatest representation is in the neutral range of 40-49; the highest adoption rates, however, are in the feminine 0-20 range.

The weak correlations resulted in rejection of H_0 and consideration, but not acceptance, of H_{1B}. The weak correlation associated with individualism is noteworthy since the result is close to the boundary between weak and strong. A notable difference between Facebook adoption rates and LinkedIn adoption rates occurred in the IVC dimension, in which Facebook showed a moderate correlation with collectivism, and LinkedIn showed a weak correlation with individualism. Similarly, the difference between Facebook and LinkedIn also appeared with the PDI dimension, as Facebook showed a weak correlation to high PDI scores, and LinkedIn showed a moderate correlation to low PDI scores. The activity across each dimension for LinkedIn resulted in rejection of H_0. The truth table for evaluating the results is displayed in Table 5.

Table 5: LinkedIn Truth Table $H_0 H_{1B}$ test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
1	1	1	1	1	1

The test for Twitter relied on a measure of central tendency comparison of the Twitter adoption rates per country to the control data group otherwise known as the full Hofstede distribution. This comparison was performed for each dimension using the Mann-Whitney U test. Twitter showed a very significant result for IVR and a slightly significant finding for M/F. Table 6 shows the Mann-Whitney results for Twitter adoption rates.

Table 6: Twitter Adoption Rates by Cultural Dimensions

Dimension	U	Z Score	P Value	Significance	H_0	$H_{1C (1-6)}$
PDI	1129.5	-0.27	0.3936	Not Significant	Accept	Reject
IVC	1175.5	-0.58	0.2776	Not Significant	Accept	Reject
M/F	**1318.5**	**-1.62**	**0.0526**	**Significant**	**Accept**	**Consider**
UAI	945.5	1.05	0.1469	Not Significant	Accept	Reject
LTOvSTO	1244.5	0.59	0.2776	Not Significant	Accept	Reject
IVR	**1759.5**	**2.48**	**0.0066**	**Significant**	**Reject**	**Accept**

While UAI did not show statistical significance the findings were of interest, as a high adoption rate was observed on the lowest grouping in UAI. Figure 9 depicts Hofstede's overall population distribution for the UAI dimension with the most populated range in the 80-89 ranges. Figure 10 shows the Twitter adoption rate by UAI.

Table 7: Twitter Truth Table $H_0 H_{1C}$ test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
0	0	0	0	0	1

LinkedIn and Facebook appear to have greater adoption rates by "feminine" countries and Twitter appears to have a greater adoption rate in countries that are outside the feminine range. The highest adoption rate for Facebook occurs in the 20-29 ranges, the feminine range of the pole where the average adoption rate is 78%. In comparison to Facebook the overall adoption rates for LinkedIn are lower so the data may be less stable. The LinkedIn results showed that the countries with the highest adoption rates displayed feminine tendencies. The highest adoption rates occurred in the 20-29 ranges (20.83%) and the 10-19 ranges (19.35%). Also of note in findings for all three applications are the non-behaviours, or the lack of activity, at various dimensional poles. The lack of activity on the restrained area of IVR for both Facebook and Twitter is remarkable.

5. Discussion

Historically high PDI scores correlate with low IVC scores (Hofstede et al., 2010; Guess, 2004). This makes the Facebook findings interesting because the weak, nearly non-existent positive correlation with high PDI and the solidly moderate collectivist correlation are somewhat surprising. Collectivism with low PDI is not common with the exception of countries in the Americas (Hofstede et al., 2010, p.103).

The Facebook findings affirmed the suggestion of higher adoption rates by collectivist countries; however, no correlation existed between femininity and adoption rates. A surprise finding was the weak correlation between high power distance and Facebook adoption rate. Also unanticipated was the moderate short-term orientation correlation with Facebook adoption. The strong correlation between indulgence and Facebook adoption, while not explicitly anticipated, is not as surprising due to the nature of this dimension, which correlated "positively with extraversion" (Hofstede et al., 2010), and the association with "content gratification alongside building social capital" (Joinson, 2008, Hofstede et al., 2010).

The LinkedIn findings contrasted with the Facebook findings in that a moderate negative correlation to low PDI exists with LinkedIn and a weak positive correlation to PDI exists with Facebook. LinkedIn (Skeels and Grudin, 2009) noted the professional use of LinkedIn; thus, the correlation with individualism is explained. However, Skeels & Grudin (2009) also noted the professional adoption of Facebook. "Facebook was quickly adopted by tens of thousands of employees to connect with friends, family, and colleagues" (Skeels & Grudin, 2009). While employers and co-workers access Facebook pages, these pages contain more personal information and less professional information than their LinkedIn counterparts.

The collectivist correlation with both Facebook and LinkedIn is not surprising based on the community nature of these applications. The LinkedIn finding toward individualism may reflect consideration of self-needs, since LinkedIn is a networking site for professional career advancement, over the group needs consistent with individualist behaviours. Twitter is slightly different because a user builds the network in a slightly different manner. In the case of Twitter, the user does not gain access to other users through groups instead the user explicitly follows another.

The observation by Hofstede et al. (2010) on Internet usage and IVR did show statistical significance for all three applications. However, other dimensions such as IVC and PDI also showed activity that previously had not been identified. The differing findings across the other five dimensions such as PDI, IVC, and M/F suggest the need for further research.

6. Conclusion

This is an observational study. As such, the use of correlation and the Mann-Whitney measure of central tendency are appropriate tools for observational evaluation. The resultant report shows that correlations have been identified between social networking adoption rates and cultural dimensions. These correlations go beyond the anticipated finding for IVR and show differences on IVC, a dimension where statistical significance also occurred. While not statistically significant, all three applications had higher adoption rates amongst low UAI countries.

All three applications – Twitter, LinkedIn, and Facebook –showed strong relationships with the indulgence pole of the IVR dimension and adoption rates. Each of the applications requires the users to determine the presentation of data to the Internet. Of the three, LinkedIn is the most structured and Twitter is the least structured. Twitter was not eligible for this same analysis, but the results of the Mann-Whitney test suggests a very strong indulgence factor that could correlate with Twitter usage; a larger dataset is needed, however, before conclusions may be drawn.

These results may point to an interesting question regarding the social nature of indulgence, and as was suggested by Hofstede et al (2010), that indulgence can be associated with extroversion. When examining the cultural framework of social networking site adoption, countries with higher levels of indulgence are more interested in these services. When considering extroversion, one surprise is the opposite correlation between IDV for Facebook and LinkedIn. Hofstede et al (2010) found extroversion was strongly correlated with IDV (in addition to indulgence). This may suggest two different flavours of extroversion. One version may suggest an indulgent social display, where other forms of extroversion are more functional than indulgent. This may be an area of future study, and could provide further revelations into the specific nature of the cultural connection, beyond the scope of this observational study.

This study demonstrates a relationship between culture and social networking adoption rates, and the data represents a single point in time. As more data becomes available, additional research can clarify and hopefully further validate the Twitter findings. Additional research such as a longitudinal study of the adoption rates of

Facebook and LinkedIn may provide greater insight to the relationship between culture and adoption rates. Further studies that examine the differences between characteristics of RenRen in China vs. Facebook may provide insight into what cultural characteristics can be associated with social network consumption models.

The adoption rates offer insights to service features that may attract or repel users based on their cultural preferences. This observation can apply to areas where social media may have an impact. Examples of this impact may include marketing, international affairs, and computer attack vectors. .

The international nature, and decidedly human nature, of social networking technologies and services provide a unique glimpse into human sociality. Like a well-constructed experiment, the social network interface is predominantly controlled across borders. Thus, the humans and their collective mental programming offer the changing variables.

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Social Media in Russian Higher Education

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Abstract: In our study, we had analyzed more than 30 academic sources in Russian language. These sources described the use of different forms of social media in Russian higher education. We found that despite the widespread of Facebook, the VKontakte is the largest social networking site in Russia. This network also is one of the biggest unauthorized repositories of copyright video and music files. Many students use VKontakte as a file-hosting service, that allows uploading the answers of the Unified State Exam (USE) and then use their smartphones as a cheat sheet in the classroom. Despite the huge popularity of social media in Russian language Internet (RuNet), the use social networks at universities are still informally. There are some pilot projects and initiatives to implement social media into university life. However, such initiatives have sporadic and unsystematic character. These projects are not supported by the administration of educational institutions. But we found several examples of the successful use of social media in teaching and learning. Though some social networking sites are used to improve the relationship between students, teachers and to create professional communities at universities. Nevertheless many teachers have skeptical opinions about using social networks in higher education. The educators argue that social networking sites can distract students from the learning process. Today Russian scientists have focused on understanding the psychological impact of social media on students. The researchers have noted a positive impact of social networks on students and have considered social media as a new way of improving higher education. We can observe the untapped potential of social media in management and dissemination of knowledge. The main reason is low level of interest in development of new educational forms among teachers and academic administration.

Keywords: Social media, social network, Russia, VKontakte, higher education.

1. Introduction

Today social media has become an important part of our everyday life. This is perhaps one of the most rapidly developing sectors of the Internet that has many different forms. In our study we will consider social networking site as a form of social media in Russia.

According to the Web Information Company Alexa (2014), the most popular social networks in Russia are Vk.com, My World@Mail.Ru and Odnoklassniki.ru. These social networking sites are very popular among Russian-speaking users around the world, especially in Russia, Ukraine, Kazakhstan and Belarus. Vk.com (or VKontakte) is the second biggest social network service in Europe after Facebook. It is available in several languages. In January 2014, VKontakte had approximately 240 million accounts (Wikipedia, 2014). Another two largest Russian-language online social networking sites are My World@Mail.Ru and Odnoklassniki.ru that are operated by leading Russian-speaking Internet Company Mail.Ru Group (MailRu, 2014). In most scientific Russian-language papers these social services are considered as social media in higher education (Table 1).

Table 1: Top 10 sites in Russia (Alexa, 2014)

Rank	Site	Category
1	Yandex.ru	Web search engine
2	Vk.com	Social networking service
3	Google.ru	Web search engine
4	Google.com	Web search engine
5	Mail.ru (My World)	Social networking service
6	Youtube.com	Video-sharing website
7	Odnoklassniki.ru	Social networking service
8	Facebook.com	Social networking service
9	Wikipedia.org	Internet encyclopedia
10	Avito.ru	Advertising site

Russian scientists tried to identify educational potential of social networks in Russian higher education (Feshchenko, 2013; Malysheva, 2013). Kribel & Shobukhova (2012) studied the most popular social networks in Russia and its using at universities. These authors argued that educational potential of social networks is still poorly understood in Russia. Other researchers looked at the prospects of using social networks in the Russian

higher education system (Feschenko, 2011; Pavlicheva & Tverdokhleb, 2012). Savzikhanova (2013) analysed the functionality of social networks for future modernization of Russian higher education.

In our study, we have analyzed about 30 academic sources in Russian language for the past 5 years. There were articles in refereed journals, conference proceedings and books. Most of the research works are devoted to the study of using social media for building learning environment, professional development of teachers and education management and quality.

2. Social Media and Learning Environment

Many Russian researchers proposed the guidelines for creating an effective learning environment with the use of different forms of social media (Grigoriev et al., 2010; Krechetnikov & Krechetnikova, 2010). For example, Starodubtsev (2012a) carried out a study about the use of different blog platforms in learning environment of universities. The author described how the open source blogging tool WordPress was incorporated into web portal of Tomsk Polytechnic University (Starodubtsev, 2012b). Golitsyna (2012) examines the possibilities of social networks and Wikis in organisation of students' learning activities. Also, some researchers studied the phenomenon of students' self-organisation in social networks for the exchange of educational information (Golitsyna, 2013; Zolotukhin, 2013). As we see Russian universities are using social media for building new learning spaces and environments, although such attempts have mainly sporadic and unsystematic character.

Social networks have great potential to create a comfortable learning environment for students and teachers. However, in many cases, Russian social networking sites in Russia can contain illegal and even prohibited content. The use of such networks in the learning process can cause negative reaction in the public authorities and educational institutions. Teachers need to explain to the students about the unacceptability of using copyrighted files in constructing the learning environment of the university. In general, social networks can greatly help teachers to create a comfortable learning environment of the university, as they have a wide set of technological tools and features.

3. Social Networking Sites and Professional Development of Teachers

Professional development of teachers is the most advanced and successful trend in the use of social media in Russian higher education. Russian scientist Bem (2010) pointed out the need to create the professional development communities of teachers by using social networks in secondary schools. Kulagin et al. (2010) offered to use social networks for supporting teachers and to build the professional communities at universities. Other Russian researcher Ruliene (2010) identified the principles of modeling for educational social networks of teachers. Malkova & Feshchenko (2012) considered the methods for the formation of teaching communities in social networks. Krasilova (2013) examined the reasons of the increased teachers' interest to use social networks in the classrooms.

One of the first Russian web portal for teachers is "Creative teachers network" (www.it-n.ru). This social network unites together more than 125,000 Russian teachers (Zorina, 2008). The other successful example is the official web portal of the Moscow Department of education (www.eois.mskobr.ru). This social networking site allows teachers to share their experiences, participate in collective projects and get professional advice (Pavlicheva, 2012). Salova (2013) presented educational social network of teachers based on the web portal of Russian National Open University (http://www.intuit.ru). Such social media communities help teachers to improve their pedagogical skills and to find new professional contacts. In these examples, we have identified the web platforms that were designed specifically for the professional development of teachers. However, we are more interested in how to use the popular and widespread social networks, such as Vk.com, My World@Mail.Ru and Odnoklassniki.ru for of teacher professional development. We believe that this approach will provide more substantial results in the future, because a specialised social network is not technologically developed and less protected.

We should recognise that not all teachers are using social networking sites for professional development. The popularity of social networks is rather typical for students than for teachers. But teachers try to use the possibilities of social networks to establish contacts with colleagues in Russian and abroad universities, moreover in some cases teachers use social networks for their career growth.

4. Social Networks for Management and Quality of Higher Education

Another interesting but less developed area are the use of social media for managing and improve the quality of higher education. For example, Magomedova (2012) has defined social media as a powerful tool that can significantly increase the quality of higher education and to change the methods of the educational process. Meanwhile, Arinushkina (2012) considered social media as a tool for monitoring the quality of learning process at Russian universities. Some authors looked at the features of the using social networks to improve the quality of Russian higher education (Sych & Bolkunova, 2013).

Russian universities gradually start to use social media for education management. For example, Gracheva (2012) examined the potential of social media in the field of higher education management. Other scientist Lupanov (2010) considered the use of social media for higher education management in different Russian regional universities. It should be noted that the problem of using social media in education management is considered in terms of organisational issues.

These examples of the use of social networks at universities demonstrate a growing interest in improving the quality of higher education through formal and informal learning. Social networks are used by university teachers not only for improving the relationships with the students, but also for a more in-depth study of educational material and involving the students in research works. Modern social networks allow teachers to quickly and easily create virtual study groups of students for studying many educational subjects with an unlimited number of participants from different departments, and even universities. These opportunities can improve the quality of studied material and extend the interaction among students and teachers. All these scientific works are devoted mainly to pilot projects and general recommendations in using social media at universities. Nevertheless, we can see a growing interest in the use of social networks in the management and quality of higher education.

5. Conclusion

The using of social media in Russian higher education has its own characteristics. It should be noted that in Russia are mostly popular only regional, Russian language social networking services. These social networks are often used by users as repositories of unauthorized music and video files. The main problem lies in the fact that students often use social networks primarily for the exchange and sharing of illegal content that is certainly criminalise the use of social media by them. Although these social services can be successful used as repositories for educational materials (audio, video, text and other files).

On the other hand many teachers do not recognise the potential of social media for teaching and learning. Moreover they often have negative attitudes to the use of social networks at universities. Many Russian scientists are developing manuals on the use of social media in the classroom, but very often these guidelines are disseminated in a small number of universities.

One of the perspective directions in the use of social media in Russian higher education is the creation of education management system on its base. This approach allows to successfully implementing social media services in the educational process. We have found that social media is often used for building professional development of teachers. This experience can be used to create university graduates groups for their further professional growth and relationships.

But one of the most difficult problems is the lack of understanding between teachers and academic administration on the use of social networks to improve the quality and management of higher education. Social media is not perceived as a tool for improving relations between all participants (students, educators and administrators) of educational process. But we can see the increase of necessity to use communicative potential of social media at universities among Russian researchers.

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Implementing Facebook in University Learning: Ukrainian Case Study

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Abstract: Numerous evidence and studies prove that Facebook has turned into one of the most influential social media in the world. It has firmly established itself as a global media for connecting people, sharing content and enhancing learning. In addition to becoming an effective means of interpersonal communication, Facebook is also being viewed nowadays as a powerful instrument able to change pedagogic practice to enhance knowledge acquisition, classroom dynamics and collaborative learning. Considering the great potential of social media to connect and to provide communication for both individuals and groups, more and more educators are working at implementing media in various learning formats and settings. But in spite of numerous studies conducted in different countries, the question of the most effective ways to exploit social media in a formal learning environment is still under investigation. The current paper sheds light upon the practices of Facebook usage in Ukraine and a case study of Facebook implementation in formal university learning within the courses "History of English" and "Methods of Teaching English". It allowed testing different strategies of implementing Facebook in formal university student learning, finding out specifics of Ukrainian students' behaviour in a virtual learning space, and peculiarities of their communication mediated by Facebook. It allowed testing different strategies of implementing Facebook in formal university learning, finding out specifics of Ukrainian students' behaviour in a virtual learning space, and peculiarities of their communication mediated by Facebook. The findings obtained contribute to the development of the theory and practice of implementing Facebook in university formal learning and can be of interest for researchers studying specifics of Facebook implementation in different cultural and learning settings, educators who are practicing social media in learning for sharing strategies and techniques of exploiting Facebook for learning purposes, and specialists developing and sustaining Facebook functions and options as a global social media.

Keywords: social media, Facebook, learning, communication, strategies.

1. Introduction

Functioning as an effective means of interpersonal communication for a number of years, social media are being viewed nowadays as a powerful instrument able to change pedagogic practice aimed to enhance knowledge acquisition, classroom dynamics and collaborative learning (Ducourtioux, 2012; Rambe, 2012; Sekret, 2013, Voorn, Kommers, 2013). Considering the great potential of social media to connect and to provide communication for both individuals and groups, it is incumbent upon educators to try to implement these means of communication for teaching purposes. Therefore, understanding the way individuals behave on such sites is a potentially valuable source of information for educators and researchers (Chen, Bryer, 2012).

Social media and social networking are "Web 2.0" tools and platforms that enable "user-generated content" through writing and uploading to a webpage. Examples of social media technologies that can be used for learning and teaching include: discussion forums, blogs, wikis, and 3D virtual worlds. External social media sites include Facebook, YouTube, Wikipedia, Flickr, Twitter, LinkedIn and Second Life (Using social media for teaching and learning – Staff Guide, 2014).

In the framework of the current research the social media are defined as technologies that facilitate social interaction, make possible collaboration, and enable deliberation across stakeholders. These technologies include blogs, wikis, media (audio, photo, video, text) sharing tools, networking platforms (including Facebook), and virtual worlds (Bryer, Zavattaro, 2011; Chen, Bryer, 2012).

According to results obtained by Dunn, 92% of students use some kind of social media. Undergraduates are 30% more likely to engage in social media interaction than postgraduates (65% compared to 35% respectively). Facebook remains the most popular social network (86%), followed by Twitter (41%) and Google+ (24%) (Dunn, 2014).

In spite of numerous research projects, commentaries and reviews conducted or written in different countries (Baijnath, 2013; Chen, Bryer, 2012; Ducourtioux, 2012; Dunn, 2014; Sekret, 2013), the question of the most effective ways to exploit social media in a formal learning environment is still under investigation. As Mills

(2011) notes, despite the many advantages identified by scholars, the dynamics of learners' participation in social networking communities is still unclear (Mills, 2011).

Researchers claim that social networks have little or no integration into formal learning environments (Chen, Bryer, 2012). At the same time students declare their wish to make more use of social media in higher education (Voorn, Kommers, 2013).

This article seeks to inform the debate by reporting the results of the case study into how social media was implemented in learning. Results of the literature review fed into the case study carried out by the author examining the specifics of utilising Facebook in the learning practices of Ukrainian university students.

The results obtained from the case study are definitely influenced by the national and cultural peculiarities of the learning participants – as with other studies from around the world. They can nevertheless be taken into account for the development of the unified models of implementing social media in learning.

2. Aims and Objectives

The research focuses on the psychological and pedagogical aspects of implementing social media into undergraduates' learning, by synthesising and evaluating the literature in the subject, and by using results in a case study of the undergraduate courses in the "History of English" and "Methods of Teaching English" in one of the Ukrainian Universities.

The objectives of the research were to:

- Analyze current international research on implementing social media in different learning settings;
- Elicit main tendencies and strategies of practicing social media for university students;
- Conduct a case study by enhancing traditional formal learning with social media activities;
- Analyze the findings and suggest recommendations on making learning via social media more effective.

3. Methods

The methods used in the case study included literature analysis, case study (experimental teaching with Facebook); interviewing students before and after the case study; observation of learning processes and communication via Facebook and in the classroom; evaluation and self-evaluation (evaluating learning outcomes and teaching practices).

4. Literature Review

The present study is concerned with the exploitation of social media in an educational context. Analysis of the recent publications concerning the pedagogical use of social media allowed differentiating a number of directions in which research on social media in education has been conducted.

Among educational and psychological aspects of e-learning and social media that have come under investigation it is possible to define the following ones: social learning theories (Bandura, 1977; Vygotsky, 1978; Ajzen, 1991) and social media (Chen, Bryer, 2012; Jonnavithula & Tretiakov, 2012); the influence of new technologies on the context of education and learning (Bouchard, 2013); social media as a tool for enhancing learning experience (Dunn, 2014; Sekret 2012); collaborative learning and social media (Rambe, 2012; Sekret, 2013); introversion and collaborative learning with social media (Voorn, Kommers, 2013); theories on selection of social media for learning purposes (RuiGu et al, 2013); interpersonal communication in learning via social media (Ducourtioux, 2012); strategies of implementing social media in different educational settings (Baijnath, 2013; Chen, Bryer, 2012); etc.

As Jonnavithula & Tretiakov (2012) state, the idea that online and offline social networks can affect learning engagement and outcomes is consistent with a number of well-established theories emphasizing connections between individuals. Among them are social constructivism (Vygotsky, 1978) which asserts that learning happens via learners' interactions enabling negotiation of meanings; social learning theory (Bandura, 1977) claiming that that individuals learn by observing others and by copying behaviours perceived to achieve

desirable outcomes; the theory of planned behaviour (Ajzen, 1991), proving that an individual's behaviour is affected by subjective norm— the perceived beliefs of the individual's peers (Jonnavithula & Tretiakov, 2012).

Bouchard (2011) states that the emergence of new technologies and their effect on the volume and nature of information on the Web are influencing the context of education and learning. The structure of the learning environment, the place and presence of learners and educators within institutional boundaries, and the nature of knowing and learning are all challenged by the fast pace of technological change.

As Mills (2011) claims, opportunities for exchange of cultural multimedia, engagement in communication in the interpretive, interpersonal, and presentational modes, and self-direction in an autonomous yet collaborative learning environment, allow instructors to exploit the potential of social interactions and exchanges available through Web 2.0 technology (Mills, 2011).

It is argued, however, that simply being able to use technology – for example, to chat with friends or access music videos etc. – is no longer enough. Today's students need to be able to use technology to analyze, learn, and explore. Digital age skills are vital for preparing students to work, live, and contribute to the social and civic fabric of their communities (ISTE, 2013).

Considering psychological peculiarities of social media users' behaviour Voorn and Kommers (2013) state that more introvert students perceive that social media are more helpful for increasing their collaborative learning performance and self-confidence. They feel that their true nature is hampered in face-to-face contact and prefer to communicate via social media rather than face-to-face communication.

In spite of the considerable achievements in the implementation of social media in the learning practice, teachers continue to face such problems as:

- Dealing with ethical issues of using social media in academic environments (Ducourtioux, 2012; Chen, Bryer, 2012);

- Searching for ways to keep students' attention and to enhance their involvement in the social media learning communication (Sekret, 2012);

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- Scrutinizing strategies to motivate students to be active, thoughtful and creative participants in the social media learning (Dunn, 2014).

Other problems highlighted include inappropriate postings, privacy and confidentiality issues; equitability and accessibility for all stakeholders of learning; copyright and other intellectual property issues (Using social media for teaching and learning – Staff Guide, 2014).

5. Description of the case study

The case study that is laid out below claimed to experiment with Facebook as a means of communication for learning purposes implemented in formal university education. In addition it was intended to test in practice benefits of social media in learning defined by other researchers and educators, and find out if it would meet expectations and perspectives of university students in the Ukrainian context.

5.1 Participants of the Case Study

The participants were two academic groups of the Ukrainian undergraduate students – one of them taking the course "History of English", and the other one – "Methods of Teaching English".

The total number of the students participating in the case study is 73. Among them, 33 participated in the experimental Facebook enhanced learning. The rest were interviewed on their experience of using social media in learning and their opinion about their pros and cons for enhancing learning.

5.2 Settings and Procedures

The experimental learning was purposed to implement social Facebook in teaching undergraduate students in order to find out specifics of its operating at the university level education.

The course "History of English" was delivered to the full-time students, having traditional classes of two hours per week. Facebook was implemented to achieve the following purposes:

- To make self-learning on the subject more regulated and systematic;

- To facilitate comprehension and learning of the theoretical material of the subject by introduction of additional videos, photos, and other resources on History of English from Internet;

- To establish more personal communication in the learning group and to provide necessary consultations as soon as needed;

- To provide an access to additional learning materials which were not included into the compulsory learning content;

- To make learning more creative and interactive and to provide possibilities for students to realize their abilities in creating presentations, case studies, mini-projects, etc., and to upload their results on the Facebook group for all the participants to discuss and evaluate.

In order to make learning more objective and transparent it was decided to invite an external expert to be a member of the group to participate in the learning activities and discussions (Sekret, Williams, 2013). This decision was motivated by the following considerations:

- Enrich learning by the knowledge and experience of the outside expert;

- Provide students with opportunities to communicate with an English language native speaker on topics connected with the subject they studied;

- Make the learning more objective, open and transparent in its progress compared to the other learning participants and for themselves;

- Develop strategies in conducting communication – establishing relations, asking / answering questions, explaining, proving, suggesting, etc. – by means of English as the foreign language (EFL) within the students' professional competence with an expert known only via social media.

Interaction via Facebook allowed the students and the instructors to go on discussing different issues on the subject after the end of the course.

5.3 Activities Conducted

In such learning conditions Facebook was used primarily as the directory of uploading supplementary learning materials, and the students' findings on different aspects of the subject matter.

An overview of the activities conducted via Facebook is presented in Table 1.

It was mutually agreed that the status of the groups in Facebook was 'closed'. The closed status allowed the students to feel more confident in experimenting with learning material and communicating with the view that it was their first experience of straightforward communication via social media with learning purposes. Afterwards in the course of the learning interaction in the Facebook group the students initiated an idea to invite external participants (not only external to the university, but external to Ukraine, too) to enlarge the circle of communication and learning.

Table 1: Activities conducted with Facebook

Areas of the Personal Development	Activities in Social Media
Professional Competence	• Enriching pure theory with vivid facts and data from life • Providing extracurricular practical tasks connected with the theory learnt in the classroom • Scheduling extracurricular activities • Presenting photos of objects/processes which are impossible to provide in class
Creativity	• Creating one's own products on the issues learnt
Communication	• Practicing communication skills • Informing/Reminding students on some events/classroom activities/tasks • Quick consultations • Making groups for research • On-line debates • Immediate feedback • Going on learning interaction after finishing the course • On-line discussions of some points of the material to learn • Providing the possibility for absent students to keep on learning and to participate in all the events
Team Work and Collaboration	• Posting original products for everybody's evaluation • Forming international groups for learning and communication • Sharing the material learnt among peers/other circles • Inviting other experts to learning/discussion/consultation
Time and Work Management	• Conducting research/case studies • Having the research results transparent as for the logic of their obtaining • Analyzing career opportunities via academic networks, Internet resources, etc., and applying knowledge obtained • Implementing polls • Gathering all the material essential for following the course and facilitating reviewing for the exam • Refreshing and renewing the material to learn
Critical Thinking	• Replacing passive listening to lectures with interactive learning in discussions, commenting, sharing ideas, etc. • Presenting findings of the conducted research
Professional and Research Ethics	• Sharing the material learnt among peers/other circles • Inviting external experts to learning/discussion/consultation • Overcoming plagiarism • Making self-learning transparent, systematic and measurable • Making learning transparent for students and other learning stakeholders
Information and ICT Competences	• Posting links on useful Internet resources for reading/viewing/analyzing /sharing/commenting • Implementing a wide variety of apps for learning (slideshow applications, etc.) • Operating social media and its content from mobile devices

6. Results and Their Analysis

6.1 Students' Experience with Internet and Social Media Before the Experimental Learning

Before experimenting with social media in learning the students were questioned on their experience of dealing with Internet, social media and activities they usually conduct using ICT.

First of all it was necessary to find out if all the students had computers and access to Internet. All of them answered positively (100% computer availability, and 94% unlimited access to Internet). In their everyday routine 22% of the students use Internet once per day, the rest admitted their entering Internet more than one time per day. 44% of respondents had mobile Internet with the possibility to use Internet from their mobile phones.

The main activities conducted with Internet are presented in Table 2.

Table 2: Students' activities conducted with Internet

Activity	Frequency, %
Using social media for entertaining	55
Getting news and other info	44
Searching for information for study	44
Communicating with friends	44
Watching films	33
Searching for papers in the subject area	22
Listening to music	22
Playing games	22
Searching for fiction	11
Using translator	11
Training in a foreign language	11
Searching for books for learning	11

Analysis of the responses allowed finding out that among Ukrainian students the social net VKontakte (VK) is the most popular. Only about 30 % of respondents use Facebook, but then very seldom, as most of their friends and acquaintances prefer the other social net, VKontakte.

Main activities conducted by the respondents via social media are presented in Table 3.

Table 3: Students' utilization of social media

Activities	Frequency, %
Communicating with friends	100
Listening to music	78
Watching news	33
Watching films	22
Watching pictures	11

6.2 Observations in the Course of the Experimental Learning and Students' Feedback

Interviewing the students after their experience of implementing Facebook in their learning, facilitated getting their views both pros and cons on such learning as well as their suggestions for improving the course learning via social media.

The advantages and disadvantages of implementing social media in learning which were highlighted by the students are grouped according to such categories as: a) communication b) valuability for professional development c) interactivity and group work d) critical thinking e) technical issues f) others (Table 4).

Table 4: Advantages and disadvantages of implementing social media in learning from students' perspectives

Category	Advantages	Disadvantages
Communication	- Facebook is the most widely used social net in the world and it is easier to get acquainted and connected with English language native speakers; - It enables establishing closer connections between a teacher and a student and among peers; - It makes possible to communicate with the teacher and students on different topics	- Few friends use Facebook for online communication
Valuability for professional development	- Facebook provides many different resources of learning EFL in various spheres; - It gives the possibility to learn something new or regard issues which slipped out of attention; - It makes a wide range of learning and didactic materials accessible and available - It s possible to view and analyze different methods of teaching - It allows for follow-up events concerning EFL teaching - It allows for finding materials helpful for EFL learning - It is possible to learn a lot of new information on the topic, and to find useful resources on learning EFL	- Lack of communicative exercises
Interactivity and Group work	- Facebook comments help to define in which direction to move when working or thinking - Facebook offers the possibility to share one's thoughts and ideas and receive immediate feedback - Facebook makes it possible to receive help when considering certain problems or situations - It makes possible sharing experience with other EFL teachers from abroad - It enables looking through peers' materials, analyzing, evaluating and commenting upon them	- The identification that the material was looked at is false, "like" mark does not necessarily mean that the post was really read through
Critical Thinking	- It is possible to choose among a number of options (ideas) suggested the ones which are more appropriate	
Technical Issues	- Facebook corrects spelling mistakes - It provides the possibility to express ideas not only in words but illustrate them using audio and visual materials - It makes possible uploading materials and sharing ideas any time - It enables users to get access to any useful resource any time	- VKontakte is more popular in Ukraine and the Facebook system seems more complicated than VKontakte - The Facebook structure is difficult to operate - Not any or limited access to Internet
Others		- It is not easy to find time to go to Facebook to post the information - Because of everyday work it is not always possible to answer a question at once, so it requires reading through all the comments to get the idea and to provide an appropriate answer

Analysis of the students' strategies in social media for learning allowed discriminating the following peculiarities about the students' strategies and behaviour in their learning via Facebook:

1. Facebook is less popular among Ukrainian students in comparison to VKontakte. As a result not many of them felt sure how to be present and conduct themselves on Facebook.
2. Learning even via social media remained an activity that was considered as official and compulsory, therefore the students were likely to fulfil tasks when their work schedule allowed or during the period right before the classroom lesson, or at the weekends when they had more free time.
3. Learning interaction via Facebook needs to be thoroughly woven into the whole logic of the course, evaluated and estimated as students' supplementary learning activity / learning which would bring an additional bonus for the learning score.
4. The students who used to be more active in virtual reality demonstrated their eagerness to work and collaborate via social media from the very beginning of the course, while the rest did not feel immediately confident in collaboration and communication via social media. The latter needed a longer period for adaptation to a new way of collaboration in learning.
5. The students demonstrated their interest in collaboration with experts from other countries and communities and were eager to fulfil their scheduled tasks provided by the remote expert.
6. The students obtained habits of scheduling their learning and fulfilling tasks ahead of time of in the case of their absence in the classroom, and compensating for it by providing additional papers or presentations on the topics learnt within the course.

7. Conclusion and Recommendations

The findings of the research reported in this paper prove those which were declared by Chen & Bryer, namely that social media provide an ability to break the limitation of formal learning, enable innovative and collaborative interactions, connect textbook knowledge to real-world problems, and facilitate personalized constructive learning (Chen, Bryer, 2012). In addition they prove the statement posed by Mills (2011) that social networking communities provide instructors with the tools necessary to facilitate learning dialogues and relationships, create authentic opportunities for learning, and foster multimodal literacy among the most communicative generation of learners to date (Mills, 2011).

At the same time the research has shown that implementing Facebook with undergraduate students as a learning tool requires many considerations. First, ways of its implementation into traditional learning, and interaction between students and teachers, need thorough planning. As learning via Facebook was implemented into the formal education the communication preserved such features as formality and obligatory in fulfilling tasks, sharing, etc. The personalization of learning and communication between instructors and students was primarily achieved in face-to-face communication in the classroom. Facebook interaction allowed sustaining the relationships established in the classroom and more deeply personalized them.

Those finding confirm conclusions drawn out by Dunn who stated that there are many challenges in teaching with social media working to thwart the most enthusiastic teacher. Privacy issues and opportunities for misunderstanding and miscommunication are high, the formal and informal nature of such practice needs to be included within the planning stages, otherwise it may lead to certain difficulties (Dunn, 2014).

Participants who have not had previous experience of using and operating Facebook may find it difficult to manage Facebook's options. Moreover, in cases when the interaction with the teacher via social media is the first experience in principle, the implementation of Facebook by a previously unknown teacher for learning a new discipline turned out to be a confusing factor for the students.

As the experience showed, activities suggested for the students should be more purposeful and straight forwarded in order to make their learning with the social media more fruitful. In spite of a great number of benefits enumerated by the scholars on implementing social media, the activities suggested via Facebook should be more thoroughly planned and elaborated upon. Just surfing the net for some information on a subject and posting it, and uploading different materials soon lose their novelty and excitement. Therefore, the activities should be more intellectually complicated and challenging. At the same time this challenge

should not be too hard to overcome as in the process of prolonged searching and guessing students may lose their interest too.

The roles of the participants – students and teachers – should be clearly defined, especially if roles are extended to involve of outer experts for the learning of a certain subject. In the case of the given experiment the participation of the expert from Great Britain was based exceptionally on principles of his free will so the amount of his involvement into the learning process was determined by the very expert and could not be regulated by any plans or curricula.

Simultaneously it must be stressed that interaction with the outer expert was conducted on a regular basis by giving problem-solving tasks each week, commenting on the students' posts regularly and providing assistance in the English language both in private mails and in messages to the whole group (Sekret, Williams, 2013).

Finally, conducting and supporting productive learning interaction via Facebook requires a certain amount of time, free from other work in order to keep the learning alive and creative. Therefore, learning via Facebook also needs a certain degree of previous planning and further scheduling for the learning materials, resources, tasks, strategies, etc. because spontaneous and episodic learning interaction via Facebook does not contribute to its productivity.

Taking into account specifics of social media, educational establishments and their policies as for the use of social media as well as the characteristics of the particular learning group it is essential to consider the following recommendations.

1. As many educational establishments still demonstrate a certain degree of alert about usage of Web 2.0 and social media in the classroom, those tools can be successfully applied to organize the students' self-learning outside the classroom, and to manage the instructor's collaboration with learners and experts from other societies for learning purposes.

2. As each social media tool may vary on the age restriction, it is essential to review them before implementing them into learning and asking students to sign up for an account.

3. As learning interaction via social media often gains a certain degree of unpredictability in communication and collaboration, the teacher should get ready to cope with different situations in order to manage the virtual learning environment, to support each member's initiatives and to facilitate collaboration. As such learning communication often extends beyond the borders of formal communication in the classroom, the teacher should be prepared to abandon his/her regular lesson plans in exchange for authentic learning.

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Social Media Marketing Analysis: New Metrics From Relational Sociology?

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Abstract: The purpose of this research is to test a new method, well known in relational sociology, and potentially useful to better evaluate social media marketing effectiveness. The whole brand communication process model has been reviewed, adding social media characteristics and active receivers. Brand communication style, with interaction between actors and integration and convergence of social media, is rapidly changing moments of evaluation and roles of traditional metrics. A new method is needed. In this article we present a new approach to measurement and experimental testing of the AGIL method (Adaptation; Goal attainment, Integration, Latent patterns). The research is based on a multidimensional approach typical of sociological investigation. A study was conducted over a four month period, with systematic observation of social media communication of a panel of beverage brands. The evaluation phase used the four-dimensional AGIL method, with a particular dashboard of metrics. The study carries out a new model for communication audit and the critical role of relational sociology. Research results showed a big gap in social media ability of those brands. In particular, the new method may not only help to evaluate communication efforts better, but also to identify corrective actions in case of deviation from communication goals. Although reference literature consists of some research in sociology that uses the square-dimensional AGIL scheme, nowadays its application to the analysis of online brands communication still has an experimental approach. This paper offers a critical and innovative point of view to test and present the cited method. Research clearly reveals the need for more effective metric assets to evaluate brand communication in the new "social" environment online, and also the need for a consistent relational orientation for brand strategies. This exploratory research provides companies with a new concept of measurement, to improve brand communication consistency. The AGIL scheme, if integrated with other complementary metrics, could improve interaction "brand-followers" in social media platforms. The originality of this paper can be found in a multidisciplinary approach, in the proposal of a new model for communication audit, and in the experimental testing of a particular method of analysis. The paper aims at contributing to Social Media Marketing theory and practice, with an open discussion from both a conceptual and an empirical perspective.

Keywords: Social Media Marketing, Communication Audit, Relational Sociology, AGIL, Facebook, Beverage Industry

1. Introduction

Brand communication style, with interaction between actors, on-offline convergence requirements, and social media integration needs, is rapidly changing moments of evaluation and roles of traditional metrics.

In dynamic markets, deeply affected by technological progress, where global competition fights increasingly in online environments, a company's survival is dependent on how well it can position itself and how it optimises its efforts (Pun and White, 2005, 67). Even if the Internet is the most measurable environment, lack of a unanimously accepted metric for communication measured on social networks continues to be an obstacle to effective marketing initiatives (Gillin, 2007; 2009).

A different measurement view is needed. A set of rules for successful corporate communications in order to generate trust, promote value and share experiences on SNS (Social Network Sites) is needed (Wirtz et al.2013; Gensler et al. 2013).

Company and consumer interaction should be considered as a dialogue, where consumers are not only receivers, but also active message senders (Prahalad and Ramaswamy, 2000) in a proactive way (Cova and Dalli, 2009; Belk, 2010). This is confirmed by Foulger (2004), for whom the receiver becomes an active message sender, both by providing feedback to the firm or by sending new signals within the communication process. The new focus is from an integrated communication auditing perspective that captures the original company communication flows effects.

The purpose of this research is to present and test a new measurement method, with a relational sociology approach, which will be potentially useful in evaluating better social media marketing effectiveness. The whole brand communication process model has been reviewed, adding to the analysis the influence of the environment (social media characteristics) and the behaviour of receivers (as active senders).

2. Updating the Communication Process Model

An important construct of Integrated Marketing Communication Audit includes the need to measure signals to ensure that the voice of the customer is heard in the brand-communication planning process (Reid, 2005, 49). For this reason, communication process analysis has to consider the coexistence of external communication flows, issued by other players, such as the receivers themselves, indirect receivers, other stakeholders, opinion leaders, trend setters, influencers or other company communications (Signori, 2008). However, the new challenge is not to create a complex information system that captures and tracks the entire set of existing information. Performance measurement systems must concentrate on metrics that are meaningful, that is, on key areas that determine organizational success or failure (Neely, 1999). A new digital environmental scanning should use simple metrics to listen to e-signals, understand external interactivity, to alert and support corporate listening to various stakeholders, and to assess performance from a wider perspective (Pun and White, 2005, 66).

A new framework of communication process analysis is necessary, to expand traditional borders to social media monitoring: capturing, analysing and retrieving useful information for communication planning. New tools are needed, to update the auditing system and to identify whether e-contexts created by consumers have an impact on corporate communication processes and strategies (Signori and Confente, 2011).

A revised model of communication process needs to show the interference/interaction between sender and receivers, respecting the Shannon and Weaver (1949) model and splitting it into different control areas, as suggested by Braddock (1958). Figure 1 indicates 9 control areas where a selection of indicators should give a response useful for managerial decisions, highlighting not only the flow of communication from a sender to receivers, but also the possibility of active receivers making an input in the flow (posting, liking, sharing), sometimes interacting also with the sender. These new inputs may change/enforce the original message and become part of the conversational exchange. Viral marketing and buzz marketing tactics base their success on receiver response size; communication in this case is not with the original sender, it is between receivers. Although companies measure a few indexes, which are always related to actions made by online users, they are not aware whether they are correctly using social media to their full potential or which communication ability is more powerful to get the expected results. Figure 1 suggests checking 9 different control areas (CA) of the communication flow and they are related to the main W (Why, Who, What, Where, When) communication decisions. In particular, different areas include different auditing purposes:

- CA 1 - Why: Check if communication goals are met. Communication results need to show their contributions also to marketing goals, such as more general strategic goals. Traditional measures, technical or economical, with pre-tests, tracking studies or post-tests may not indicate correctly the overall impact of social media efforts and their goal attainment.

- CA 2 - Who: Verify target affinity and understand the receiver. In dynamic online environments relational sociology can support and point to identification of behavioural characteristics of consumers and their participation in online communities (Bagozzi and Dholakia, 2006; Mc Alexander et al., 2002).

- CA 3 – Sender: This area requires checking sender credibility, his image, his reputation. In social networks communication, the supply side is not always recognised as a brand because senders may be multiple and a conversation may happen in a group, with the company as a member like the others, or the communication flow may be started directly from receivers who become active independent senders.

- CA 4 and CA 5 – What/How: Analysis of message content should be able to evaluate if the planned intrinsic meaning of the message is respected with the encoding used. This may change in different social media and different communities because the environment of communication has different codes of conduct and different vocabularies. A company should be able to evaluate its ability to adapt its communication online.

- CA 6 – Where/When: In this area media selection and media planning auditing have a long list of traditional indicators. What is still required in the SNS environment is to understand the capacity to correctly use the new media respecting their interactive characteristics.

- CA 7 – Receiving and Decoding: Understanding information correctly as perceived by receivers firstly requires the study and understanding of customer behaviour and expectations about their interaction with brands in social networks (Van Doorn et al., 2010).

- CA 8 – Feedback and Effects: Strengths of the feedback, passion of the interaction, plus size, content and direction of new input, should be added to standard metrics usually measuring cognitive response, attitude and action effects.

- CA 9 – Overall Coherence Analysis: The general communication plan, analyzing all communication flows during a given time frame, should be evaluated for its coherence of goals, targets, media, contents and results.

Figure 1: Updated Communication Process and Key Control Areas
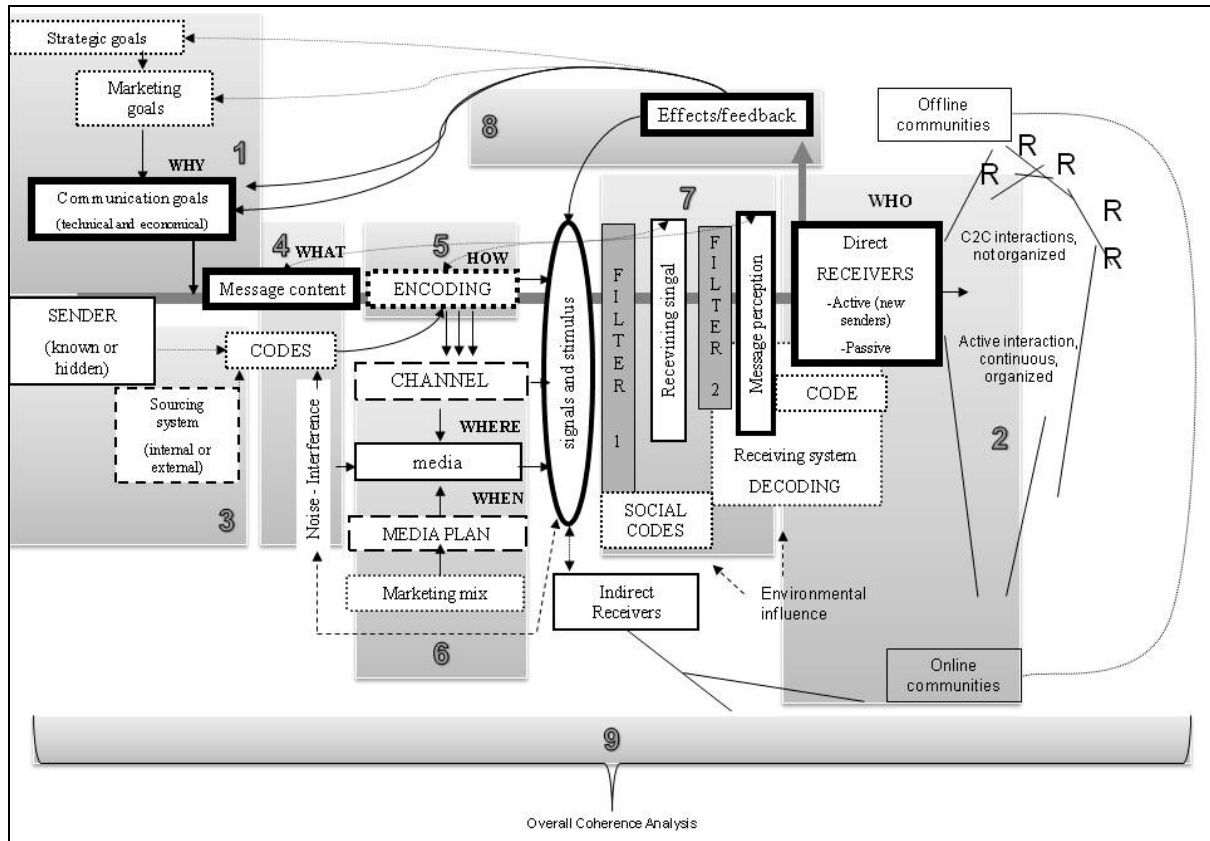
Source: Our elaboration from Signori, 2008; Signori and Confente, 2011

Figure 1: Updated Communication Process and Key Control Areas

Past studies have already investigated tools and models for the measurement of consumer engagement through social networks (Vargo and Lush 2004), suggesting potential action for brands through social media (Vargo, 2008), defining objectives that a brand should pursue through dialogue in social networks (Owyang and Lovett, 2010), or defining new brand-users' conversation metrics (Mandelli and Accoto, 2012). Even if the potential of SNS channels and media has been widely discussed in literature, we identified a gap in measurement, which may be helpful for communicative ability of brands in social networks. A method, easy to adopt, may help companies in understanding the validity of their communication decisions and how they are consistent within the environment in which they act.

3. AGIL, an Analysis Method From Relational Sociology

Previous studies have already addressed analysis of the advantages of integration of SNS in tactics of brand communication (Bampo et al., 2008). The characteristics of interaction lead brand communication tactics towards higher involvement and active participation of followers/fans, valuing and researching processes of co-creation of content and sharing of knowledge (Kristensson et al., 2004; Lundkvist et al., 2004; Amara et al., 2009).

A fourth-dimensional scheme, called AGIL (Adaptation; Goal attainment, Integration, Latent patterns), was originally designed for sociology research purposes by Parsons (1964) and applied by Donati (1991, 2010) for a socio-relational approach. Using the AGIL scheme, as a compass for orientation in relational dynamics, it has

been possible to study the brand communication as a social phenomenon and set the scheme within four dimensions. Previous researches adopted it to measure brands communication in the Internet (Martelli 2003; Martelli and Gaglio, 2004; Grosso and Signori, 2013).

Assuming the socio-relational approach, applying AGIL to the analysis of brand communication in SNS as a phenomenon of social relations, it is possible to identify four inter-related dimensions:

- Adaptation (A) follows the principle of optimization of resources and equipment. Communication analysis is read as a process orientated towards brand efficient adaptation to the environment (Adaptation), so this dimension may contribute important information for monitoring Areas 6 and 7 in Figure 1.

- Goal Attainment (G) denotes the dimension of implementation of information disclosure and visibility. Brand Communication is seen as a process aimed at achieving specific goals of the brand (Goal attainment), so this dimension may help in Areas 1, 6 and 8 in Figure 1.

- Integration (I) is set according to the standards of the community in which brand communication is performed and follows the regulative principle of conformity, with traditions and values shared by the community. Brand communication is readable as a process through which the brand is integrating with the norms of the community of users, so this dimension can be helpful in Areas 2 and 7 in Figure 1.

- Latent patterns (L) is the identity dimension where communication is guided by the principle of consistency and coherence with ideas and values (Martelli, 2003, 32). In this dimension communication is seen as a form of expression of the identity of the social actor (individually or collectively). It is the expression of brand identity and continuity between on and off line, so it is mainly useful in Area 2 of Figure 1.

4. Objectives

This empirical research is part of a broader research on web communication analysis, whose interests stem from the observation of socio-communicative dynamics in the interactive environment of the social network (Coyle, Smith and Platt, 2012; Woodcock, Green and Starkey, 2011). In particular, the main purposes of this research have been divided into the following sub-objectives:

- to assess the integrative skills of brand communication with environment social networks, like Facebook and its users;

- to apply a multidisciplinary approach for measurement, completing marketing metrics from a socio-relational perspective, and evaluating brand communication consistency;

- to test the AGIL method for different brands in order to understand the importance of its contribution to communication audit, in particular evaluating their communication through Facebook Brand profiles;

- to verify if the AGIL method is suitable in a performance measurement system for brand communication.

5. Research methodology: testing AGIL

Research has been conducted on a sample of brands in the beverage industry, monitoring communicative activity through Facebook (Fb) Brand profiles. The sample included the following brands:

- Energy drink: Red Bull, Burn;

- Water: Font Vella, Contrex;

- Beer: Estrella Damm, Heineken, Corona, San Miguel, Guinness;

- Soft drinks: Coca-Cola, Dr Pepper, Schweppes, Pepsi, Fanta.

Daily observations for 15 weeks (Jan-April 2012), at weekly intervals, have been conducted, tracking and collecting, on 14 Fb brand profiles, a number of indicators as suggested by the four-dimensional AGIL method:

- (A), with adaptation function:
  - A1=No. of likes on post (text) published by the brand;
  - A2=No. of likes on post (hypertext) published by the brand;
  - A3=No. of likes on post posted by users;
- (G), with goal attainment function:

- G1=No. of posts (text), published by the brand;
- G2=No. of posts (hypertext), published by the brand;
- G3=No. of posts made by the posted by users;
- (I), with integrative function:
  - I1=No. of comments on post (text) published by the brand;
  - I2=No. of comments on post (hypertext) published by the brand;
  - I3=No. of post comments on post posted by users;
- (L), with integrative identity and community development function:
  - L1=No. of shares of post (text) published by the brand;
  - L2=No. of shares of post (hypertext) published by the brand;
  - L3=No. of shares the post received posted by users.

A scale type logarithm, raised to the power of ten, scores 0-5, was used to measure communication and interaction on previous indicators. A first data analysis processing step led to identifying scores for each indicator, and grouping them by dimension (AGIL) and types (1, 2, 3) to create a matrix case for variables. The difference between indicators of type 1 and 2 is in the kind of content posted by brand in their Fb profile (text or hypertext); type 3 tracks actions and initiatives made by fans spontaneously, acting in Fb brand profiles and/or any activity of interaction from/between fans.

Exploring data with SPSS we monitored specific skills of brand communication. After a cluster analysis, data has been recognized as indicators attributable to two different groups: sub-dimensions 1 and 2; and sub-dimension 3. This preliminary result permitted the definition of a dual perspective: communicative actions in which brands are active (types 1 and 2); communicative actions in which brands are passive while users are active (type 3). This dual perspective, brand-users/users-brand, allows us to evaluate how effectively the communication skills of a brand profile are attributable to the initiatives of brand or brand followers.

6. Findings

AGIL testing, applied to evaluate brand communication in Fb, offered a number of results:

- single brand perspective: 14 brands have been evaluated in 4 dimensions and 3 sub-dimensions (A1, A2, A3; G1, G2, G3; I1, I2, I3; L1, L2, L3);

- cross-industry perspective: 4 industries have been compared and brands have been evaluated within their contexts;

- overall AGIL abilities, correlating dimensions to understand their connections;

- brand/user and user/brand (1-2 vs. 3 types) comparison;

- AGIL as a useful method of evaluating brand communication flows within an SNS environment, balancing marketing and socio-relational perspectives.

Findings on a single brand perspective (Table 1) clearly picture brands' abilities in SNS for different dimensions. The Coca-Cola brand seems to have the highest overall AGIL score and it comes from its relative high Adaptation, Integration and Latent pattern abilities, while the Goal attainment is low and that means that communication goals have not been met in the SNS. This example demonstrates the importance of the right metric to measure communication results in this new environment. Too often social media effects are measured with popular metrics such as no. of fans, no. of likes, no. of shares, no. of comments, as individual indexes and not inter-related indicators.

A cross industry perspective, even if the number of cases per industry is limited in this research, may help in evaluating brand results with industry standards. Industry contexts often differ from each other in communication routines and users' average passion. A brand should evaluate its results among the industry. In our results (bottom of Table 1) soft drinks seem to have the highest overall AGIL score, followed by beers and energy drinks, even if, looking into details, abilities change in different dimensions.

Reading overall results in the general dimension and the correlation between dimensions, the correlation index r (pearson index) demonstrates how the different dimensions are related. The highest relationship is between Adaptation and Integration with $r_{(A-I)}=0.84335$; where the action for utility is connected to the action for reciprocity, so it means that the more a brand adapts to the SNS environment, the more it is integrated

with the norms of the community of users and vice versa. Adaptation is also highly correlated to the Latent pattern with $r_{(A-L)}= 0.79008$; showing that brands do not justify their presence in SNS exclusively for economic goals. Integration is correlated to the Latent pattern, with $r_{(I-L)}=0.78242$; so the form of participation in the events of the community is connected to the brand identity and continuity on and offline. Brands are using new media, trying to spread their traditional communications and to build up reciprocity connections. Goal attainment and Integration have $r_{(G-I)}= 0.58951$; Adaptation and Goal Attainment show a weaker result in correlation, having $r_{(A-G)}=0.31426$, similar to the relation between Goal attainment and the Latent pattern with an $r_{(G-L)}=0.28814$. In summary, results show how brand technical ability in communication does not effectively produce results: in fact, goal attainment has weak relations with all the other dimensions. The problem may be interpreted as brands not being able to set right goals for the new environment.

Table 1: AGIL results for 14 brands of the beverage industry

	A A1, A2, A3	G G1, G2, G3	I I1 I2, I3	L L1, L2, L3	mean for brands
Red Bull	3.000	0.667	2.000	2.333	2.000
Burn	1.667	0.667	1.000	1.000	1.083
Font Vella	1.000	0.667	1.000	0.000	0.667
Contrex	2.333	0.333	1.000	0.333	1.000
Estrella Damm	0.667	0.667	0.667	1.000	0.750
Heineken	3.333	1.333	3.000	3.000	2.667
Corona	2.333	1.000	1.667	1.667	1.667
San Miguel	1.333	0.333	1.667	1.000	1.083
Guinness	2.333	1.667	2.000	1.667	1.917
Coca-Cola	3.667	1.667	3.667	3.333	3.083
Dr Pepper	3.667	0.667	3.333	2.000	2.417
Schweppes	0.667	0.333	0.333	1.000	0.583
Pepsi	3.667	0.667	2.667	2.333	2.333
Fanta	2.667	1.000	1.667	1.000	1.583
Mean for dimensions	2.310	0.833	1.833	1.548	1.631
Median	2.000	1.000	2.000	1.500	1.000
Variance	2.499	0.758	1.615	1.724	1.935
Std dev.	1.600	0.881	1.286	1.329	1.395
Energy drinks	2.333	0.667	1.500	1.667	1.542
Water	1.667	0.500	1.000	0.167	0.833
Beer	2.000	1.000	1.800	1.667	1.617
Soft drinks	2.867	0.867	2.333	1.933	2.000

Source: Our elaboration

Finally, when evaluating brand actions and fan actions it is evident that the most important sender on FB brand profile is still the brand and that encoding is made up of more hypertext content (Table 2, type 2). The challenge is to interpret when fans are more active (Table 2, type 3). Both type 1 and type 2 results (brand actions) are weakly correlated with type 3 (fan actions): $r_{(1-3)}=0.301$; $r_{(2-3)=}0.302$.

Table 2: Brand actions text (1) and hypertext (2) vs. Fans actions (3)

	Type 1 A1,G1,I1,L1	Type 2 A2,G2,I2,L2	Type 3 A3,G3,I3,L3
Red Bull	2.25	3.75	0.00
Burn	1.50	1.75	0.00
Font Vella	0.50	1.25	0.25
Contrex	1.00	1.50	0.50
Estrella Damm	0.25	0.75	1.25
Heineken	2.75	3.00	2.25
Corona	2.25	2.25	0.50
San Miguel	0.50	1.50	1.25
Guinness	3.00	2.75	0.00
Coca-Cola	2.75	3.25	3.25
Dr.Pepper	3.00	3.25	1.00
Schweppes	0.50	1.00	0.25
Pepsi	2.50	2.75	1.75
Fanta	1.50	2.25	1.00
mean	1.73	2.21	0.95
variance	0.99	0.82	0.85

Source: Our elaboration

The proportion (fan activity vs. brand activity), in absolute numbers, between the fans' response and the independent input from fans is about 1:3 when brands use promotional stimuli, whilst the proportion falls to 1:5, when brands write informative messages.

Albeit brand actions are large, fans' actions are still not really considered and boosted, given the unilateral conversational approach that brands still adopt in new media.

7. Discussion

As regards theoretical implications, in identifying an appropriate strategic asset for brand communication in social networks, the general feeling is that only through a multidisciplinary approach and the adoption of its own instruments of different academic perspectives, can we fully understand the increasing complexity of communication systems and the rapid evolution of digital media. What is important is to understand that communication flow is no longer unilateral in the new digital environment, and that receivers may be passive, active respondents and active independent senders. The size and quality of the connection depend on a number of abilities, such as adaptation to the new environment, integration into the community, definition of the right goals and skills to create a brand identity in that community. A connection between AGIL dimensions, basic mechanisms within a brand communication action, resources that influence brand communication, suggestions to improve branding consistency in the SNS environment and relative measurement areas, are detailed in Figure 2.

As regards managerial implications, findings showed that a brand communication activity fails to trigger mechanisms with relational brand/followers and followers/brand, and remains crystallized in processes that do not exploit the full potential offered by socio-communicative social networks. In the light of these considerations, it appears crucial to re-evaluate the qualitative aspect of the communication of the brands through their own profiles, adopting processes that can also encourage spontaneous participation by the fans, the motivation to relate to the brand as a social actor among the various environmental social networks (Figure 2).

Figure 2: AGIL contribution in communication audit

Function/scheme AGIL	Basic mechanisms within a brand communication action	Recourses that influence brand communication capability in SNS	Suggestions to improve branding in SNS environment	AGIL contribution in communication audit: Control Areas
A - Adaptation	Economic resources optimization	Financial resources produce efficiency	Do not expect a short-term ROI (return on investment)	CA 6 'where': (A1,A2); CA 7 'receiving process': (A3)
G -Goal Attainment	Strategic brand goals, function	Information and influence of strategic communications	Create relevant content	CA 1 'why': (G1,G2, G3); CA 6 'where': (G1,G2); CA 8 'effect': (G3)
I- Integration	Brand Interaction function	Effective integrative mechanism of brand communication in SNS environment	Revise relationship assets in communication with users, share, interact.	CA 2 'who': (I1,I2, I3); CA 7 'receiving process': (I1,I2, I3); CA 5 'how' (A3,G3,I3, L3)
L- Latent Pattern	Identity of brand communication	Values, organization, skills, community	Social community online	CA 2 'who': (L1,L2, L3)

Source: Our elaboration from Grosso, 2014

8. Conclusion

In the SNS context, brand communication is going to be reconsidered as a process based on new social and participatory dynamics between brands and users of SNS. The relationship between the brand-SNS environment and brand-users' expectations is no longer tied exclusively to economic and financial assets, but, in a broader view, is based on social and participatory dynamics (Hogan, 2008). Integration of the model of communication process control with a relational sociology approach, could help companies to bridge the information gap and then to optimise evaluation and planning of their communication efforts.

Regarding main limitations, although literature references present some sociological searches that use AGIL, to date its application to the analysis of the online communication brand still has an experimental character. Adopting the AGIL scheme as a tool for measuring the communication skills of the Facebook profiles of the brand, allowed us to follow a pattern of orientation through which it was possible to detect information and aspects that have enriched the methodological framework. However, a more extended research is needed to refine the method: we noticed that the original scheme guided the empirical research along a predefined path. Furthermore, the method is necessary but not sufficient: if supplemented by a content analysis, it may also close the gap between understanding message contents and related effects (CA 4).

It is therefore proposed, for further research, to integrate and complete the analysis with survey methodologies, to deepen the perception of users of online platforms.

This exploratory research provides companies with a new concept of measurement to improve brand communication consistency. The AGIL scheme, if integrated with other complementary metrics, could improve interaction "brand-followers" in social media platforms.

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Social Media and E-Health Development in Lithuania

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Abstract: Health care sector modernizations and innovations are greatly depending on societal participation as any other public share sector. The goal of the research presented in this paper is to evaluate user inclusion to e-health development and reveal possible trends in adapting social media tools for e-health services development. In order to achieve the goal a background analysis via scientific literature review was carried out. Case study on virtual e-health platforms in Lithuania and quantitative empirical data analysis followed the literature review. Research finding revealed that e-health developers are not active in including health care service users in e-health development, but the users, on the contrary, are using intensively social media tools and creating virtual e-health projects based on innovative e-participation and self-governance mechanisms. The trends in health care user`s activities influence positive e-health development. The limitation of this research is that the research was oriented only towards health care service user approach in e-health development supported by social media and virtual communities; the influence of other stakeholders on e-health development is not the focus of this paper. The findings of the research are valuable for e-health developers in order to create user-friendly e-health systems and successfully implement them. The paper presents original research on social media role in Lithuania's e-health development.

Keywords: health care services, e-health, social media, virtual platforms, stakeholders, e-participation

1. Introduction

Health care sector, as one of public sphere sectors, is greatly influenced by global digitalization. Already a while ago, new information and communication systems have been identified as having powerful potential to improve the functioning of health care organizations too (for instance, Neumann et al., 1996). Further studies tend more towards the analysis of stakeholder inclusion via new technologies, rather than information and communication technology advantages as such. Benefits of usage of information and communication technologies' enabling effective management of information systems in public sector processes are no longer under consideration. This paper presents analysis of social media tools adaption trends for e-health service users' in e-health service development in Lithuania. Purpose of this research is to reveal possible trends in adapting social media tools for e-health services development. Research approach relates to scientific literature review, case study on virtual e-health platforms in Lithuania, quantitative empirical data analysis by defining trends in user inclusion for e-health care services development.

2. User Inclusion, Social Media Tools and E-Health

Generally research literature on information systems states that user involvement in the software development process is a valuable aspect, because it contributes to the efficiency of information system requirements, furthermore an efficient identification process leads to a better future user's involvement in the process and commitment to the user; during this process users are better informed and therefore contribute to their increased confidence of the developers and future higher level of satisfaction of the users, quality and use of information systems after installation (Gallivan and Keil, 2003). Chang (2006) emphasized the relationship between stakeholder involvement and the different aspects that contribute to the successful implementation of organizational change, for example., the stakeholder dialogue need increases with each level of integration complexity, complex information and communication technologies (hereinafter – ICT) solutions usually require re-engineering of work processes, and the latter - to recognize themselves and information system analysts practice requires the active participation of stakeholders, as it contributes to the overall organizational processes and technology interaction and understanding of the resulting higher satisfaction of the users. Gallivan and Keil (2003) have pointed out that it is dangerous to see the future from the user participation process always leads to the successful implementation of the project. However, inclusive and inviting to participate or contribute anyhow, consensus seeking style was effective in respect of the decisions, while strict and ordering leadership helped to eliminate opposition and hindrance to the development of the project at the time and especially when the process formed a hostile and conflicting organizational climate, which further led to follow this decision to refuse old information systems (Scott, 2005).

Social dimension of ICT through the inner-organizational user involvement in the e-health process is critical: users need to participate in every aspect of the selection, development, deployment, and use of an information system, and need to co-determine the whole process, since otherwise they would reject and fail the deployed systems (Ehn, 1993 in Scholl, 2004). Further development of e-Health requires better delivery of services to users, providing simpler processes and greater convenience, improved interactions with customers, user empowerment through access to information, efficient management, increased transparency, new sources of information when shaping policies and services etc. (Skaržauskienė, 2013). Social media embraces various forms of electronic communication (as websites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos) (according to Merriam-Webster dictionary). Kaplan and Haenlein (2010) distinguish six different types of social media: collaborative projects, blogs and microblogs, content communities, social networking sites, virtual game worlds, and virtual communities. These types of social media may be adaptable to any participation level presented by Friedman and Miles (2006): Autocratic (Manipulation, Therapy, and Informing); Token (Explaining, Placations, Consultation, Negotiation); Empowering (Involvement, Collaboration, Partnership, Delegated power, Stakeholder control). Recent growth of social media is not uniformly distributed across age groups; therefore, health communication programs utilizing social media must first consider the age of the targeted population to help ensure that messages reach the intended audience (Chou, 2009). Antheynis et al (2013) research in US revealed that patients primarily used Twitter (59.9%), especially for increasing knowledge and exchanging advice and Facebook (52.3%), particularly for social support and exchanging advice, their main barriers for social media use were privacy concerns and unreliability of the information, though patients expect future social media use, provided that they can choose their time of social media usage. A variety of ICT support the development and maintenance of relationships that overcome geographical distance and time constraints, increase transparency, and enable better community outreach and participation (Bacigalupe and Askari, 2013). Currently terms like 'e-patient' rise in scientific literature, it has emerged to describe patients who are using the Internet and social media tools to take charge of their health (Fergurson and The E-Patient Scholars Editorial Team, 2007; Bacigalupe and Askari, 2013). Bacigalupe (2011) draws attention to the collaborative health movement advocates for the integration of mental and physical care, including the patient's family as an intrinsic piece in the health intervention, and in which the professionals and institutions work together with the patient.

User inclusion to e-health development in the base of the process is common to any other civic participation. As Skaržauskienė et al (2013) noticed, that apart from the positive possibilities user inclusion offers, like new idea generation, decision making, forecasting or predict the outcomes of future events, aggregating knowledge etc., there are significant risks: main risks associated with users inclusion issues of privacy, false identity issue, intellectual property issues, censorship etc.

The strategy on the public sector development in Lithuania emphasizes extension of electronic services and their wider use with e-health services being on of the priority areas. Bacigalupe and Askari (2013) argues that e-health tools are often designed and aimed at patients who have better digital and health care access and not deliberately built to reach the most vulnerable populations. Though in the frame of our research analysis of e-health tools and social media in e-health sector has the sufficient basis to be scrutinized: (1) health care in Lithuania is available to everyone; (2) internet devices (computers, mobile phones, etc.) and internet usage in Lithuania is much higher than average. Further in the research analysis of virtual e-health platforms in Lithuania is presented.

3. Virtual E-Health Platforms in Lithuania

As a result of e-health development health care and healthy life style promotion institutions tend to not stay in local computer networks and limit themselves with intranet opportunities for professional data sharing, but also extend to the Internet or expand intranet with social factor approach. For example, National pathology center (hereinafter NPC) in year 2012 became first Lithuania's health sector institution which started using social networking platform for inner communication. This way NPC expected to improve laboratory research result quality, to organize managerial activities more fluently and be more efficient in (inside and outside) project implementation. NPC chose "TeamGate" cloud computing based software. Main difference between social networking platform and intranet in organization is that in the social networking platform users may not only read posts of their colleagues but be active in posting information: asking questions, submitting comments. Decision was unique, unusual though not easily made. Before choosing social networking platform NPC specialists tried out several projects and information systems. Decision was made based on the social networking platform interoperability with other NPC's systems.

Various e-health solutions are being applied in health care and health life style promotion institutions. Most focus is paid to data and information management systems, though in the aspect of user inclusion an outer factors are become important part of whole e-health sector development. Via the Internet reachable portals, sites and communication platforms e-health development might be spread to a more effective healthy lifestyle promotion or user (electronic) inclusion in developing more effective healthcare management system (see table 1). So far in Lithuania this type of online projects are created mostly by non-governmental parts. In the further analysis of healthy life promotion and health care internet projects web portals of clinics and hospitals are not included. Also websites of brand pharmaceutical companies are omitted.

Table 1. Online projects in Lithuania for health care and healthy life style promotion

Section	Subsection	Online project	Integration with common social networking platforms
Informational	Health care news	Smlpc.lt	Facebook
		Pasveik.lt	Facebook
		Visivaistai.lt	Twitter, G+, MySpace, Facebook, and 291 more
		366.lt	Facebook
		Farmapedia.lt	-
	Health care news and products	Camelia.lt	Facebook
		Eurovistine.lt	-
		Zoopharma.lt/	Facebook
	Health related products	Hiperfarma.lt	Facebook
		Hipereko.lt	Facebook
		Hiperzoo.lt	Facebook
		Ecohit.lt/	-
		Ekomed.lt/	-
		Nvaistine.lt	-
Participatory	Weak participation	Sveikaszmogus.lt	Facebook
		Sveikata.lt	Facebook
		Sveikatavisiems.mamairvaikas.lt	Facebook
		Odontologija.com	Facebook
		Mednews.lt	-
		Imunitetas.lt	Facebook, G+
	Consultations	Manosveikata.lt	Facebook, Twitter
		Konsultuokis.lt	-
		E-pacientas.lt	-
	Strong participation	Sveikasvaikas.lt	Facebook
		Sveikata.info	Facebook, Twitter, G+
		Pincetas.lt	-

Online projects in Lithuania for health care and health life style promotion may be divided into two big groups: informational and participatory. Informational online projects announce health related news, provide health related products or does both. Online projects in health related news subsection presents to the user information on medicaments, diseases and illnesses, healthy life style and other topics. Information provided in this type of pages is both encyclopedia type and current scientific knowledge. Online projects in health related products subsection presents e-commerce portals oriented towards providing production on health matters (special bandages or tools, special foods, hygienic cosmetics, special clothes, etc.). Online projects on health related news and products encompass both first subcategories. Participatory online projects can be split to weak participation, consultations and strong participation. Online projects of weak participation are considered to be health related news portals with commenting possibility. There are weak links between users as they are not obliged to register, they cannot suggest topics, and they simply can discuss a given topic under the post. Consultation projects are based purely on doctors' consultations or have doctor consultation as an extra feature to main content of the webpage. Online projects with strong participation are more specific. During our analysis three domains were assigned to this subcategory: sveikasvaikas.lt, sveikata.info, and pincetas.lt. All three are different in the scope of their function; though all embrace a strong aspect of participation (users are able to influence content of the project). At sveikasvaikas.lt social networking is carried

out in 4 ways as follows: social networking facebook plug-in in sveikasvaikas.lt website; facebook page, blog, and the most important way: food product catalogue in which each of users can browse for information without charge as well as contribute to the database. Registration is mandatory for participation. Next online project Sveikata.info announces information on healthy diet, natural medicine. Participants of this online project are able to share opinions on announced topics or develop their own topics. Registration is mandatory for participation. The third online project Pincetas.lt is electronic space for patients, doctors, health care institution employees to evaluate doctors and health care institutions. Evaluation is based on certain methodologies applied to each case. This project allows to form health sector in Lithuania, which is more transparent and growing in service quality.

Porter (2006) offered interdisciplinary system of classification, which could be adapted in their work by researchers and scientists from various fields. This system will be used for the review of online projects carried out in Lithuania in the context of e-health. The system of classification is presented in figure 1 "Classification of online projects on e-health in Lithuania".

Key variable of this system is establishment type of the project. The first group of online projects are initiated and managed by their members. The relationship within these communities can be oriented towards professional or social interaction. Second group of online projects are initiated and managed by legal entities registered as commercial, non-profit or governmental institutions. The most important relationship orientation for efficient user inclusion to e-health development is governmental, though as we can see, this relationship orientation currently is the weakest in Lithuania.
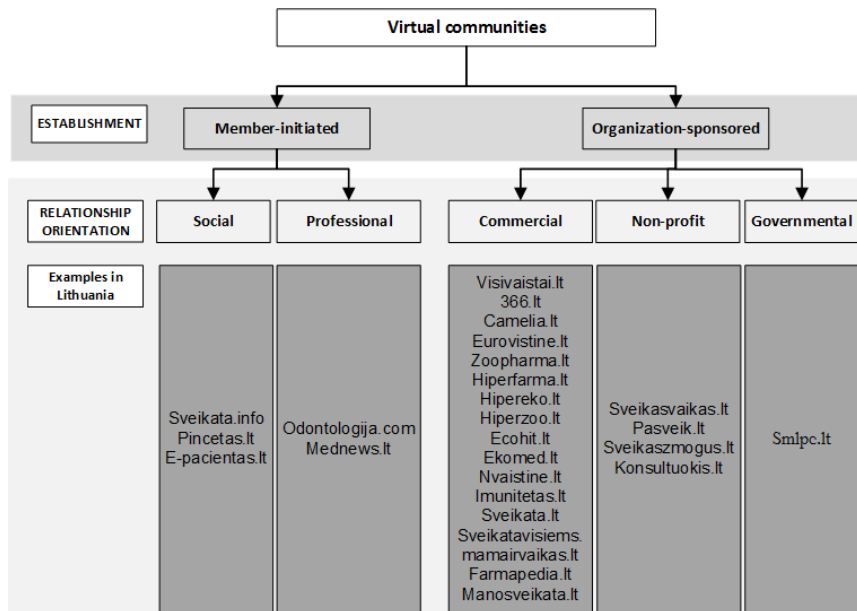
Source: adapted from Porter (2006)

Figure 1 Classification of online projects on e-health in Lithuania according to online project establishment entity

During this research 26 online projects for health care and health life style promotion were analyzed. Only one of them (Smlpc.lt) is a governmental project, others business and health care user initiatives. E-health and social media in Lithuania has developing relation. Health care service users are interested in e-health not only for healing matters, but prophylactics as well. In the next chapter there is a quantitative study results on health care service user inclusion in e-health development from above.

4. User Inclusion for E-Health Care Services Development

Empirical research on "User participation in e-health system scale and tendencies: awareness about e-health, satisfaction with the state of e-health and needs in e-health area" was carried out with one of the goals to find out user inclusion and participation in e-health system scale and tendencies. Tool for research was structured online questionnaire. It consisted out of questions which were created to reveal user inclusion to e-health development, citizens' tendencies to participate in this process, inclusion forms, relations between

demographic characteristics and viewpoint on user inclusion to e-health development. In order to reach this goal 12 questions were prepared (plus 11 demographic). Target group for inquiry was chosen persons over 18 years old and living in Lithuania. Interview at respondents' home was chosen as inquiry and data selection method for this research. Sample was set with 1000 respondents. Respondent sampling was set as representative, multi-stage, random. Among the respondents there were 45 % were women and 55 % were men. Respondent geographical dispersion was as follows: 46 % of respondents live in major Lithuania's cities, and 54% of respondents live in other cities, towns and villages. Respondents' age varied from 18 to 90 years old: 38 % of respondents 39 years old or younger; 18 % of respondents 40 - 49 years old; 17 % of respondents 50 - 59 years old; 27 % of respondents 60 - 90 years old. Before data gathering a pilot research was organized in order to validate questionnaire. Pilot research was carried out on 16 – 17th June, 2013. Main data for research was collected during 5 – 15th July, 2013.

Main question of the user inclusion research was "Were you ever asked to give your opinion on e-health services at your health care institution?'' (see fig. 2). Absolute majority (96%) answered that they were not asked.
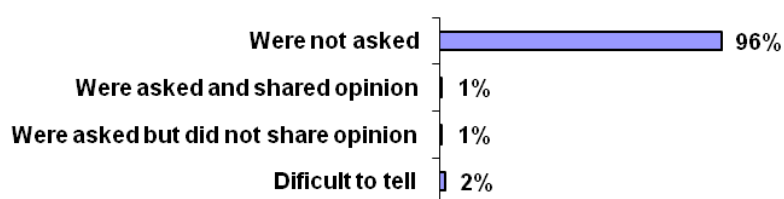
Figure 2. „Were you ever asked to give your opinion on e-health services at your health care institution?", values in percentage

Respondents who were asked for their opinion on e-health services (N=21, 6 did not answer the question) were asked in eye-to-eye interview in a health care institution (N=7), with a questionnaire provided by health care institution (N=4), group discussion organized by e-health development committee at health care institution (N=3), telephone inquiry (N=1). Having in mind the size of sample to this question, statistical correlations are not valid. Though any apparent tendency related to sex, age, education, or occupation does not seem to appear in willingness to participate. This question was answered by 15 respondents. 12 of them are using services in public health care institutions and 2 in private health care institutions (1 respondent claims not to use health services at all).

E-health questions given to health care service user by their health care instructions covered the following areas: e-health services in general; e-health service, usage; benefits of e-health services; satisfaction with e-health services; functionality of e-health services; accessibility of e-health services; the need for new e-health services, convenience in using e-health services, usage of specific e-health services. This question was answered by 13 respondents (plus 8 who marked ''Other'', but not specified). 11 of them are using services in public health care institutions and 2 in private health care institutions.

E-health care service users were inquired in two main stages of e-health development: (a) design of e-health technological product; (b) user satisfaction in functioning e-health services. 12 out of 21 respondents were not able to identify the stage; 6 respondents gave opinion in user satisfaction in functioning e-health services; 3 respondents in design of e-health technological product. This question was answered by 9 respondents (plus 12 who marked ''Other'', but not specified). 7 of them are using services in public health care institutions and 1 in private health care institutions (1 respondent claims not to have used health care services at all). User initiative regarding e-health development was taken by 15 (out of 21) respondents.

Usage of e-health services turned out to be rather high – 81 % of respondents stated that they use at least one e-health service. To the development of e-health services in order to make those services as user-friendly as possible only 2,6 % of respondents stated to feel included. 2 % of respondents stated to have taken initiative to make suggestions.

Information acquired during the empirical research is diverse on one hand showing apathy of the respondents on the matter, on the other hand discontent with weak citizen inclusion. For example, respondents with open question were asked what e. health care services they think are missing in their health care institution (see fig. 3).
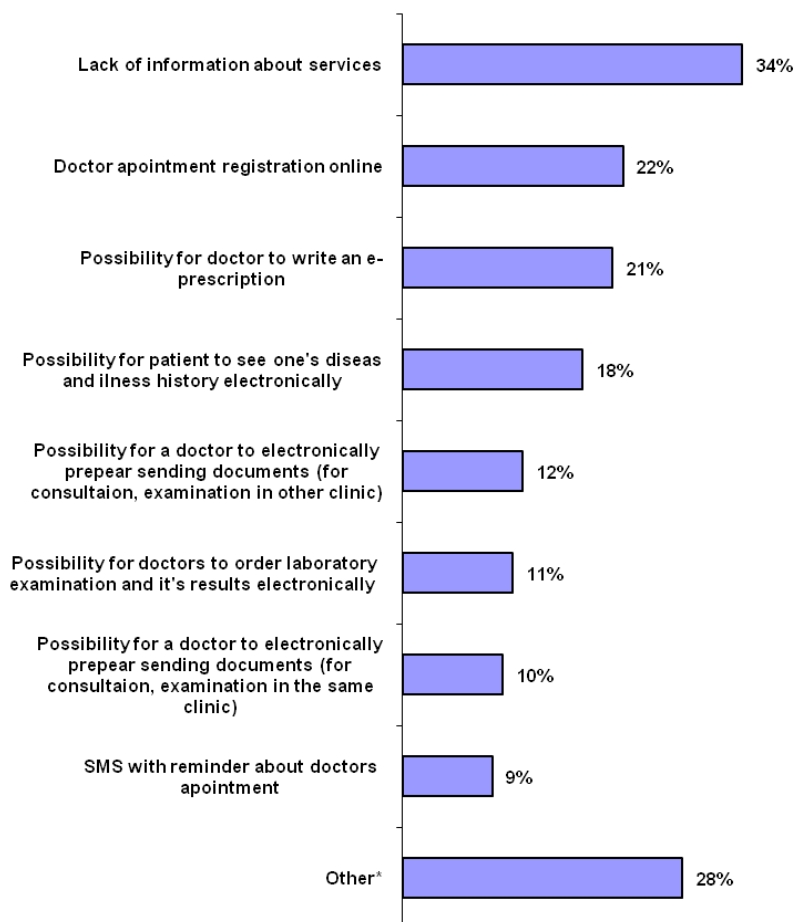
*Other: nurse organizes in-patient treatment information electronically, doctor consultation online, Digital imaging available for doctors and nurses, etc.

Figure 3 'Which e-health services you think are missing at your health care institution?'', few options possible, values in percentage

Only 163 (out of 1000) respondents answered is question. It shows that e-health service users are not used to sharing their opinion in e-health service area. The open question what e-health services are needed in their health care institution, respondents usually stated that there was a lack of information about such services in general – 34 %, answers also included specific services: registration to the doctor on the Internet – 22 %, electronic prescriptions – 21 %, the opportunity to see their electronic disease history – 18 %. Other suggestions were mentioned less frequently. As we can see citizens feel the lack of awareness about e-health in general.

5. Conclusions

Information and communication technologies support effective and sustainable development because they create conditions for the emergence of new forms of networking based on social media. The fact that Lithuania recently has burst with internet accessibility and application of electronic services, wide opportunities to foster public involvement emerged. Variety of online projects testifies about the growing involvement of society members into e-health services for treatment and healthy lifestyle promotion.

However, user inclusion to e-health development in Lithuania is scattered and does not comply this needs of e-health service users. Our empirical research results show, that only 2 % respondents (N=1000) feel included into e-health care service development. 96 % (N=1000) respondents were never asked for their opinion on e-health matters. The majority of users participated in e-health development via eye-to-eye interview, by questionnaire, discussion in a committee, telephone inquiry. The society members don`t have experience in using social media tools for solving social issues.

The user inclusion and value co-creation in public service organizations is difficult and long process. However, governmental organizations could create conditions to foster and facilitate the process, encourage users for

self-governance, invest the time and effort to generate real results. Communities or organizations could develop their creative capabilities using new technologies: building online communities, adapting virtual communication tools and creating networked projects. Inefficient use of inclusion tools and stakeholder participation management suggest deep organizational and quality management problems in e-health developing institutions.

After generalizing results of the research presented, following scientific questions rises: how different online e-health projects could affect positive changes in e-health institutions, how to increase engagement of passive health care service users to e-health development etc.

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An Examination of the Nexus Between Social Media, Relationship Marketing and Market Research and their Influence on Customer Satisfaction, in the ICT Sector in India.

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Abstract: This paper examines the link between Social Media, Relationship Marketing and Market Research and their influence on Customer Satisfaction in the Information and Communication Technology (ICT) sector in India. As Social Media has emerged as an important tool to support the marketing practices of firms, it was integrated with the Marketing Management and Relationship Marketing perspectives that are widely prevalent in theory and practice. The item pool for the constructs was drawn largely from extant literature. Exploratory factor analysis (EFA) was employed and it shows that each construct was well defined by multiple indicator variables. It provides evidence to support the nexus between Social Media, Relationship Marketing and Market Research in the ICT firms. Multiple regression analysis conducted using the latent variables computed from EFA showed a significant positive relationship between the independent variables - Social Media, Relationship Marketing and Market Research and the dependent variable Customer Satisfaction.

1. Introduction

This research emerges from the integration of High Technology (HT) Marketing literature, Strategic Marketing Management literature and Social Media literature. Since 2001, there has been a revolutionary growth in the Information and Communication Technology (ICT) sector in India. A report by the Ministry of Statistics & Programme Implementation, MOSPI (2010) records that the ICT sector Gross Domestic Product (GDP) has increased to Rs. 2530 billion in 2007-08 from Rs. 656 billion in 2000-01. ICT also contributes to economic growth, globalization, foreign exchange earnings, market diversification, employment generation and socio-cultural developments (MOSPI, 2010).

The objective of this paper is to examine the link between Social Media, Relationship Marketing and Market Research and their influence on Customer Satisfaction in the Information and Communication Technology (ICT) firms in India. This is a part of a larger study in which the authors investigated the marketing practices of the ICT firms in India and their influence on Customer Satisfaction and Firm Performance. The marketing of HT products, such as the ICT products, differs significantly from the marketing of other low technology products (Yadav, Swami & Pal, 2006; Traynor & Traynor, 2004). However, very little research has been undertaken into the strategic marketing practices of these firms (Hills & Sarin, 2003). The gap in literature for the general theory development related to the marketing for HT firms has also been identified by Uslay, Malhotra and Citrin (2004). Their study noted the need for both conceptual and empirical research regarding the marketing practices of HT firms, and in particular that of ICT firms.

2. Theoretical background

Lehtinen (2011) proposes that an integrated approach to marketing must be used as most empirical research done in marketing emphasize the parallel use of the transactional and relationship marketing approaches. The two approaches complement each other and it is difficult to separate them both in theory and in marketing practice. Coviello and Brodie (2000) concluded that, regardless of the firm size, to capture the scope of what is being practiced, the theoretical framework should include the full spectrum of marketing practices. Further, Fruchter and Sigue (2005) also contend that marketing is about both exchange transactions and exchange relationships. Hence an integrated approach was used to develop the conceptual framework for this research study. A combination of the Marketing Management perspective and Relationship Marketing perspective were used to identify the marketing practices of the ICT firms in India and to understand the influence of these practices on Customer Satisfaction and Firm Performance. A brief note of the two different perspectives of marketing is discussed below.

The Marketing Management school of thought evolved in the late 1950s and the 1960s was characterized by a decision-making approach to manage the marketing functions with an extended focus on customers. Drucker (1954) characterised marketing as a decision-making activity directed at satisfying customers at a profit by targeting a market and then making optimal decisions on the marketing mix or the 4ps. The focus of the firm is on managing the marketing mix decision variables – Product, Price, Promotion and Place (distribution) in order to attract customers. Segmentation and targeting, differentiation and positioning were also introduced in the marketing literature, during this period. Marketing Research also gained significance in marketing management practice as an instrument for aligning the firms' productive capabilities with the needs of the market place (Webster, 1992). Thus, the marketing management school formed a union between the "marketing concept" that firms exist to satisfy customer wants with the perspective of optimizing profit through the management of the marketing mix (Pels & Saren, 2009). The practices relating to the Marketing Management components lead to Customer Satisfaction resulting in higher firm performance (Slater, Hult & Olson, 2007). It is also acknowledged that application of strategic marketing management practices in HT firms increased Customer Satisfaction (Mohr, Slater & Sengupta, 2010).

2.1 Relationship marketing theory

Since early 1980's there has been a significant increase of interest in theory, research and practice focusing on the buyer-seller relationships in marketing (Dwyer, Schurr & Oh, 1987; Lewin & Johnston, 1997). During these decades companies competing in both consumer and industrial markets sought the help of their suppliers to support them to achieve stronger competitive advantage by supplying them with higher quality products, improved services, and efficient distribution systems. Thus, they began to embrace co-operative buyer-seller relationships. Accordingly, the parties involved in the exchange attained and settled for lower total costs by working together to ensure efficient management of inventories, to share risks and to eliminate unnecessary tasks and procedures (Lewin & Johnston, 1997). These "discrete" market relationships were progressively displaced by closer, long-term relationships between the buyers and the sellers (Lewin & Johnston, 1997).

The term "Relationship marketing" was first alluded to by Thomas in 1976 (cited by Harker & Egan, 2006). This term was explicitly used by Berry (1983) in the context of services marketing. Relationship marketing is described as attracting, maintaining and enhancing customer relationships. Servicing existing customers and selling to them is viewed to be just as important to long-term marketing success as acquiring new customers (Berry, 2002).

Although research identifies numerous factors associated with relationship marketing constructs the factors that were most cited are trust, commitment and communication. These three factors are consistently identified as significant for relationship marketing practice to be successful. Trust is recognised as the central component in all relational exchanges (Dwyer, et al., 1987; Lewin & Johnston, 1997). Trust exists when one party in the exchange process has confidence in an exchange partner's reliability and integrity. Also Dwyer et al. (1987) argue that trust provides a basis for future collaborations, which results in long term relationships among the partner firms. It is proposed that trust is the extent to which the customer believes that the vendor has intentions and motives beneficial to the customer and is concerned with creating positive outcomes for the customer.

Commitment is the other major component of relational exchanges (Anderson & Weitz, 1992; Moorman, Zaltman & Deshpande, 1992). It is defined by Moorman et al., (1992) "as an enduring desire to maintain a valued relationship" (p. 316). Studies propose that relationship commitment is the crux of all successful working relationships and is also commended as an essential ingredient in successful long term relationships. It is posited that commitment increases with the ability of the exchange partners providing positive outcomes to one another in their relationship.

Communication is also an important aspect of successful relationships and a major antecedent to trust and commitment (Anderson & Narus, 1984; Mohr, Fisher & Nevin, 1996). Anderson and Narus describe communication as "formal and informal sharing of meaningful and timely information between firms' (1990, p.44). Empirical research from literature suggests that communication increases the level of trust between firms (Anderson & Narus, 1984; Anderson & Weitz, 1992). Along with the partners' ability to align their

expectations and perceptions communication also helps build trust among partners by providing a mechanism that could be used to resolve conflicts (Arnett & Badrinarayanan, 2005).

2.2 Social media

It is proposed by Naude and Holland (2004) that marketing has moved from the transactional approach, through the relationship approach, and into a new era that is called information marketing. In this new era it is posited that the successful acquisition, analysis and deployment of information is the key to marketing success whereby "social media content spreads and influences users in a social media network" (Kane, Alavi, Labianca and Borgatti, 2014, p. 286). Brennan and Croft (2012) and Naude and Holland (2004) contend that the most successful marketing organisations in this era will be those that make the most effective use of Information technology tools in developing their marketing strategy. The latest tool to emerge that has huge impact on the marketing practices of firms is social media.

Social media marketing is a form of word-of-mouth marketing, done with the intention of influencing the customer communications by professional marketing techniques through the World Wide Web (Kozinets, de Valck, Wojnicki & Wilner, 2010). Social media facilitates companies to talk to their customers directly and also the companies to listen to what their customers are saying about them and their products and services, thereby enhancing the relationship between them. Because social media helps to know the pulse of the customer and deepens the relationship with the customers, it is proposed that it would influence customer satisfaction. It is found to drive customer purchase intentions, build brand image thereby influencing the performance of the firms.

2.3 Customer satisfaction

According to Gupta and Zeithaml (2006) customer satisfaction is defined essentially as the consumer's judgement that a product or service meets or fall short of expectations. Firms seek to increase customer satisfaction, because, satisfied customers ultimately lead to financial benefits to the firms who serve them (Ranaweera & Prabhu, 2003).

There is significant evidence in the marketing literature that customer satisfaction is an important driver of a firm's profitability. For example, Rust, Moorman, and Dickson (2002) report a positive impact of customer satisfaction on financial performance, such as return on investment and return on assets. A study on the personal computers industry by Smith and Wright (2004) suggests that the firm's ability to satisfy its customers provides a sustainable competitive advantage that allows higher average prices, higher sales growth and higher return on assets. Customer satisfaction is also recognised as one of the market assets that can be leveraged to produce superior financial performance (Clark, 1999).

In response to the competitive market place managers seek to improve organisational effectiveness by identifying organisational metrics which contribute to long term success (Sui-Hua, 2007). Sui-Hua contend that organisations are touting for continuous improvement strategies to stay ahead of the competition. In order to drive continuous improvement researchers are placing more importance on measuring organisational performance from the customer's perspective. A growing number of organisations are using customer satisfaction measures in developing, monitoring and evaluating product and service offerings (Anderson, Fornell & Lehmann, 1994). This is because the firm's ability to satisfy customers provides a sustainable competitive advantage which is necessary to operate in today's competitive global environment (Smith & Wright, 2004).

Customer satisfaction is a more fundamental indicator of firm's performance due to its link to behavioural and economic consequences that are beneficial to the firm. According to Gupta and Zeithaml (2006) customer satisfaction is expected to lead to repurchase behaviour (behavioural consequence), which translates into increased sales and profits (economic consequence). Also, customer satisfaction is the central element in the marketing exchange process (Martin-Consuegra, 2007). The marketing concept starts with a well-defined market, focuses on customer needs, coordinates all the activities that affect customers, and produces profit by satisfying customers (Kotler & Keller, 2009). In this study, Customer Satisfaction is measured from the firms' perspective (Hung & Wong, 2007).

3. Methodology

In this section the research design, data collection and sampling methods employed in this research are discussed. Sub-sections which describe the questionnaire design, sampling design, instrumentation and survey implementation are included in the discussion.

An exploratory research design was used to obtain insights into the different marketing practices of the ICT firms in the Indian context. To achieve this, a Web survey method of data collection was used for the study. The choice of the suitable survey method depends on the context of the specific research and the advantages of the chosen method over the other options (McDaniel & Gates, 2010). This study includes ICT firms and so the sample population has access to the internet. Hence the Web survey method was adopted for the study as it facilitates speedy data collection, geographical flexibility, less cost and there is less interviewer interference (Zikmund & Babin, 2012).

A review of relevant literature and a series of informal discussions with the academic staff and experts in ICT firms guided the development of the survey instrument of this study. Structured questions were used in the questionnaire. Fixed alternative questions were used because it was easier for the respondents to answer and it enabled comparability of answers, facilitated coding, tabulation and interpretation of data (McDaniel & Gates, 2010; Hair, Black, Babin, Anderson & Tatham, 2006).

To minimize the risk of comprehension and misinterpretation problems, definitions of key question concepts were made available to the web survey respondents (Peytchev, Conrad, Couper & Tourangeau, 2010). This helped the researcher communicate the intended meaning of the concepts to the respondents, thereby increasing the accuracy of the responses.

Once the questionnaire was developed, it was pre-tested with a small group of respondents for clarity of questions, relevance and completeness, thus improving the face validity of the survey as suggested by Zikmund and Babin (2007). Further modifications to the questionnaire content, format, wording and response alternatives were made based on the results of the pretest.

To facilitate clear understanding of the definition of ICT firms in India, International Standard Industrial Classification (ISIC) codes were used in this study. The sampling frame for this research comes from the list of registered online panel members of a reputed market research agency who provided the data collection services for this research. To overcome the sampling frame error, that the list might contain more than the desired population, screening questions were relevantly used in the survey. MacCallum, Widaman, Zhang and Hong (1999) and Tabachnick and Fidell (2013) propose that sample sizes in the range of 100-200 are acceptable with well determined factors. The sample used for the current study is 187, which is well within the guideline set by Tabachnick and Fidell (2013).

The authors employed Exploratory Factor Analysis (EFA) and Multiple Regression analysis to test the proposed conceptual model. However, only the results pertaining to the marketing practices relating to Social Media, Relationship Marketing and Market Research are presented in this paper, since it brings out the nexus between these constructs. The full results of the EFA have been published.

4. Results

EFA was used in this study to identify the underlying structure among the independent variables (IVs) in the analysis and to reduce their number to include only the most parsimonious sets of variables in the subsequent multiple regression analysis (Hair, Black, Babin & Anderson,2010). A significant score of .904 for the KMO measure of sampling adequacy and a Chi-square value of 5135.122 (significant at .000) rendered the data suitable for EFA. As recommended by de Winter and Dodou, (2012) principal axis factoring with oblique rotation (promax) was employed in this research study. Eigen values were used to determine the number of factors to be extracted. Items with factor loadings less than .30 were deleted from the analysis. Single item factors were also excluded from the analysis from the standpoint of parsimony (Lawson-Body, Willoughby & Logossah, 2010). Items with squared multiple correlations less than .4 were excluded from the analysis (Anna & Osbourne, 2005). EFA resulted in a final instrument of 43 items representing 10 distinct factors. These 10 factors explained 72.36% of the variance. The tables below (Table 1, Table 2 and Table 3 present the EFA results for the three factors of interest, viz, Relationship Marketing practices, Market Research practices and

Social Media practices, together with the squared multiple correlations (communalities) and the Cronbach's Alpha (coefficient of reliability).

Table 1: Factor 1 – Relationship Marketing practices

Items	Factor loadings	SMC*
RM10: We are committed to establish long term relationship with our customers	.821	.764
RM2: In our organization, customer relationships are considered to be a valuable asset	.750	.779
RM8: We fulfill all obligations and promises we make with customers.	.692	.689
SM7: Our constant interaction with customers through online networks has improved our customer relations.	.666	.635
SM5: We encourage our customers to participate in live and interactive discussion forums in our website.	.656	.642
RM5: We can rely on our firm to keep the promises that it makes to the customers	.646	.692
RM3: Our senior management emphasises the importance of customer relationships	.633	.609
SM6: Our firm has increased efficiency in developing products due to online customer interaction at various stages of product development.	.602	.610
RM6: In our relationship with customers, our firm can be trusted at all times	.587	.685
RM9: We make significant investments (in terms of time and resources) in building relationship with our customers	.513	.638

*Squared Multiple Correlations; Cronbach's α: .920

Factor 1 'Relationship Marketing Practices' explained 39% of the total variance and consisted of 10 items with factor loadings ranging from .513 to .821. It is interesting to note from the above table that some of the items that were used to assess the Social Media practices (SM5, SM6 & SM7) loaded under this factor. It appears therefore, that social media is effectively used by the ICT firms in India to improve relationship with customers by constant interaction with customers through online networks (SM7), to encourage customers to participate in live and interactive discussion forums (SM5) and to increase efficiency in developing products due to online customer interaction at various stages of product development (SM7). The results show that social media practices are prevalent in the ICT firms in India and are efficiently used by these firms to build relationships through effective communication.

Table 2 includes the four items that describe the Market Research practices that loaded under this factor. Once again it can be seen that the ICT firms tend to use social media for market research purposes. Along with using external contractors for market research, firms are found to use social media to know about the reviews of their firm's products and services (SM3) and to know about competitor's products and services (SM4). Also market opportunities are actively searched for in user generated blogs in online communities (SM2). Hence this factor is assigned the name 'Market Research Practices'.

Table 2: Factor 2. Market Research practices.

Items	Factor loadings	SMC*
SM3: Our firm constantly monitors social network sites for reviews of our products and services.	.793	.662
SM2: Our firm actively searches for market opportunities in user generated blogs in online communities.	.644	.656
MR2: Use external contractors to do market research for us	.513	.515
SM4: In our firm, we constantly check online networks to know about competitor's products and services.	.387	.545

*Squared Multiple Correlations; Cronbach's α: .806

Three items that pertain to Social Media loaded on to the third factor. These items explain the purposes of using social media by the ICT firms, for reasons other than for relationship marketing and marketing research. Social media is found to be used by the firms to facilitate endorsement of the firm's products (SM10), to explain the products and services to customers (SM9), and services by customers and to build firm's reputation (SM11).

Table 3: Factor 3. Social Media practices

Items	Factor loadings	SMC*
SM10: We use our online networks to facilitate endorsement of our product/services by customers	.813	.728
SM9: We use our online networks to explain our products/services to customers.	.666	.629
SM11: Our engagement in the online social networks helps build our firm's reputation.	.566	.660

*Squared Multiple Correlations; Cronbach's α: .825

As the next step, the summated scales for these three factors, viz, Relationship Marketing practices, Market Research practices and Social Media practices were computed. As recommended by Hair et al., (2010), these summated scales were formed by combining the individual variables loading into a factor to compute the composite measure. The composite measure for Customer Satisfaction practices was also computed. These composite measures represent the new composite latent variables that were used in the subsequent regression analysis. The results of the regression analysis are presented below.

A standard multiple regression was performed using the composite measures of the latent variables. The Dependent Variable – Customer Satisfaction was regressed against the Independent Variables (IVs) - Relationship Marketing practices, Market research practices and Social Media practices. Regression results presented here follow the pattern adopted by Tabachnick and Fidell (2013). The analysis yielded a statistically significant result. R (the multiple correlation coefficient) for regression was significantly different from zero, $F_{(3,183)} = 96.228$, p<.001. The adjusted value of R^2 = .606 indicated that approximately 61% of the variability in Customer Satisfaction is influenced by the IVs chosen for this analysis. Relationship Marketing practices has the highest β value of .547 indicating that it has a strong positive influence on Customer Satisfaction. This is also supported by a highly significant t-value (t = 8.483, p = .000). Social Media practices has the next highest influence on Customer Satisfaction with β = .185, t = 3.134 and p = .002. This is followed by Market Research practices with β = .155; t = 2.572 and p = .011. The influence of Social Media and Market Research are also significant at p < .01.

5. Conclusion

The results of EFA show that each construct was well defined by multiple indicator variables. This is further attested by the measures of reliability with Cronbach's α ranging from .806 to .902. The contribution of this study to theory development emerges from the valid operationalisation of Social Media as a construct that has hitherto not been considered. Further there is evidence to support the use of Social Media for Relationship Marketing and Market Research purposes by the ICT firms in India. The nexus between Social Media, Relationship Marketing and Market Research can be clearly seen by the loading of items pertaining to Social Media in Relationship Marketing and Market Research. Finally all three latent variables have a significant positive influence on Customer Satisfaction. The present study draws its inferences from the empirical testing of data from the ICT sector in India, which contributes significantly to the economic growth in India. In order to bring Social Media into mainstream theory it will be necessary to undertake this research in other countries and contexts.

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Enabling the Casual Entrepreneur: Artists and Artisans on Social Media

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Abstract: Much has been made of the digital marketing mix and the way in which brands are moving from 'Paid' and 'Owned' digital media into 'Earned' (for example social media and online PR). We will consider the way in which individuals have used social media as their entry point to commercial activity. Furthermore the desire to share and possibly sell artworks and other made objects can be a catalyst for individuals to engage with social media for the first time. Using a case study approach, the research examines the fascinating case of #DrawingAugust on Twitter; over 200 artists, amateur and professional tweeting one drawing per day throughout August 2013. Some artists were seasoned Twitter users, while for others #DrawingAugust represented their first experience of this social media platform. The research examines the social, economic and unexpected consequences of the artists' participation in the event. The reach and influence of those taking part is considered using metrics such as retweets, favourites, mentions and follows. We go on to consider the traits of the entrepreneur and the role of social media in facilitating entrepreneurial behaviour among the respondents in this virtual community. An interesting aspect of the research is the extent to which the event facilitated both global and local relationships. At a local level we studied a group of artists from meeting through Twitter, then meeting in reality on the last day of August, through to planning a joint exhibition. An example of the internet 'acting as a kind of glue bringing communities together in all sorts of wonderful new ways' as Carswell discussed in his article (2013).

Keywords: social media, art social media, Twitter, virtual community

1. Introduction

Author and politician Douglas Carswell recently argued that 'The web is bringing society together, not tearing it apart' (2013). In the face of widespread cultural pessimism – 'We are constantly invited to believe that the country is going to the dogs' - he holds the belief that the internet is making the world a better place.

If we believe that our creative capital has value in our society, the visual arts and crafts make for an interesting lens through which to examine the impact of social media. Pictures have the particular quality of overcoming language boundaries, thereby making a global point of view possible. For many, their creative endeavour represents a passion or even a compulsion.

Much has been made of the digital marketing mix and the way in which brands are moving from 'Paid' and 'Owned' digital media towards 'Earned' - for example social media and online PR (Chaffey & Ellis-Chadwick, 2012). We will consider the way in which individuals have used social media as their entry point and are moving in the opposite direction – towards commercial activity. Furthermore the desire to share and possibly sell artworks and other made objects can be a catalyst for individuals to engage with social media for the first time – for some it answers the question 'What is Twitter for?'

Using a case study approach, the research examines the fascinating case of #DrawingAugust on Twitter; over 200 artists, amateur and professional tweeting one drawing per day throughout August. Some artists were seasoned Twitter users, while for others #DrawingAugust represented their first experience of this social media platform.

The research considers the role of social media in facilitating entrepreneurial behaviour among the respondents in this virtual community by mapping against entrepreneurial traits identified in the academic literature in this field. The study examines the social, economic and unexpected consequences of the artists' participation in the event. The depth of engagement with the online forum #DrawingAugust is measured using metrics such as retweets, favourites, mentions and follows. Further, the artists were surveyed on economic factors such as commissions and sales.

Soft measures were also considered including collaborations, friendships, feedback and confidence both in the use of Twitter and as an artist. Respondents were also surveyed about negative factors such as trolling and other unwelcome dialogue.

An interesting aspect of the research is the extent to which the event facilitated both global and local relationships. The global reach of artists through #DrawingAugust is discussed. At a local level we studied a group of artists from meeting through Twitter, then meeting in reality on the last day of August, through to planning a joint exhibition. An example of the internet 'acting as a kind of glue bringing communities together in all sorts of wonderful new ways' as Carswell discussed in his article (2013).

2. Background to #DrawingAugust

Early in 2013 two artists resolved to set themselves an artistic challenge. Deciding to commit to doing a drawing every day for a month, they considered when they would be able to devote this much time to such an enterprise. They agreed that August seemed the ideal month to do so.

"There are times in your life when you wish you had the chance to give some focus to a skill that you're trying to develop or refine. And a chance conversation with Wales Arts Review's Design Editor Dean Lewis (@OlderthanEvil) on Twitter was all it took to provide the idea for Drawing August." says DrawingAugust co-founder Jean Stevens (Wales Arts Review, 2013).

As early as May 2013 Dean Lewis started using the hashtag #DrawingAugust on Twitter as he and Jean Stevens (@JeanStevens4) started to promote the idea of a Twitter-based event whereby artists would post a photograph of their drawing every day throughout August. The Tweets would contain the searchable hashtag #DrawingAugust thereby creating a forum.

"It's great to see social media used for a positive purpose where people can provide a supportive environment to build networks, encourage others and help others gain confidence." Says Jean, "It's a big thing showing your drawings to the world for everyone to see, judge and potentially feedback. So, with more volunteers signing up every day, we sent out Tweets asking if anyone else wanted to join in."

As artists began to sign up by requesting that they be added to a list, they also began to promote the idea to other artists they knew, thereby creating a viral effect. By the start of August, over 200 artists had joined the initiative. During August 2013 as more and more content was posted and shared, the hashtag began to trend, and yet more artists joined in.

"We thought it would be great to get to 50 participants, then it went to 100, and so on, until we ended with 213 official participants and many more using the hashtag to comment on the work and the project as a whole" said Jean.
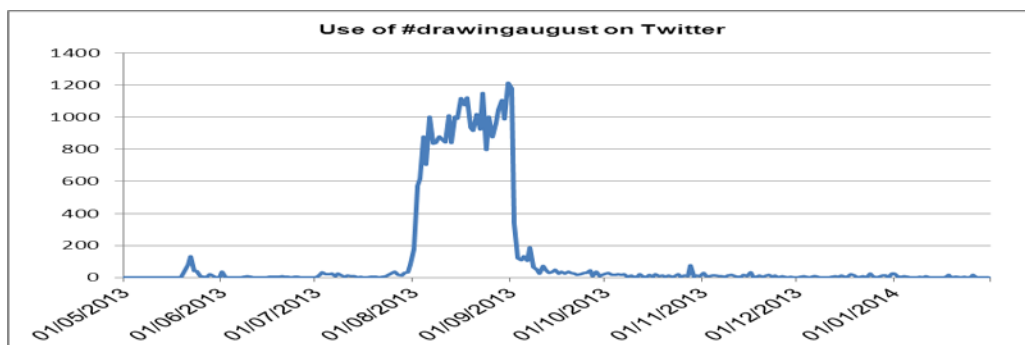
Figure 1. Use of #DrawingAugust on Twitter

As can be seen in *Figure 1,* at its peak there were 1,216 instances of use of the hashtag in one day. Between 1.05.13 and 31.01.14 #DrawingAugust has been used on 33,260 occasions.

#DrawingAugust was identified as a subject for a case for study as a result of direct involvement as an artist in the forum. The consequences of participation were profound, initially seeming like a trivial diversion but quickly attracting very high levels of engagement and activity on Twitter.

On the last day of August, six #DrawingAugust regulars who had not met before except online, met and drew together. The phenomenon of taking part in this online forum was discussed, and the artists resolved to put on a joint (real) exhibition in 2014. So the virtual became actual.

The experience of artwork being retweeted and favourited, as well as eliciting numerous favourable comments on a daily basis was very motivating. Furthermore, by diligently following everyone who interacted, it was possible to grow the following by over 600 in one month. As an external measure, the Kred score (a Social Media Influence metric) was monitored and was found to climb from 40 to 62. Sales to complete strangers also resulted, including some overseas.

It was this move into commercial activity that prompted the examination of the way in which engagement with this forum might have facilitated entrepreneurial behaviour in the participants.

3. Entrepreneurship

For the purposes of the study the emphasis has been placed on the traits of the entrepreneur. Early in attempts to define entrepreneurship, the importance of creativity and imagination were identified by writers as being key in the entrepreneurial process (Shackle 1970). Koh (1996) identified the four key traits as need for achievement, locus of control, propensity to take risks, and innovativeness. Ten years later Gurol and Atsan (2006) examined Koh's four characteristics and added another two: tolerance for ambiguity and self-confidence. In the research instances of these 8 entrepreneurial traits will be measured, although a limitation of the study is that causality is not easily captured.

The inclusion of the term 'Casual' Entrepreneur attempts to capture the concept that from the outset, it was clear from the nature of the dialogue that participants were not in the first instance using this forum on Twitter to sell their work, indeed to do so would be contrary to the etiquette of the community and would probably have been frowned upon by members had it occurred in an overt fashion.

4. Objectives

There were two main aims of this exploratory study;
To better understand the way artists engaged with the #DrawingAugust forum

- Extent and depth of engagement

- Sentiment positivity / negativity

This research also attempted to establish whether or not artists participating in #DrawingAugust on Twitter were displaying entrepreneurial characteristics, and the extent to which participating in the online forum was facilitating that entrepreneurship. More specifically:

- Whether the artists are displaying entrepreneurial behaviour

- Is entrepreneurship developed through engagement in an online community?

5. Methodology

The research was conducted via a 40-item online questionnaire. The questionnaire was designed in GoogleForms, and the link to the online survey was distributed via Twitter.

5.1 Sampling

The population of interest for this research was the group of artists who had taken part in #DrawingAugust on Twitter – approximately two hundred identified themselves at the start.

The sampling strategy was part 'convenience' and part 'judgement' in that an open call to #DrawingAugust participants was published on Twitter as well as messages to named individuals known to have taken part. This effort was assisted by the support and active involvement of Dean Lewis @OlderThanEvil who was the organiser of #DrawingAugust and had the highest profile among the participants.

5.2 Questionnaire Design

The survey started with a screener question asking the participants whether they took part in #DrawingAugust. The next question qualified the extent of participation in terms of artwork posted to the forum – as it could be possible to consider oneself to have 'participated' by simply commenting or sharing on a post.

The next two questions related to the expectation and reality of participating in #DrawingAugust – these were designed as free text boxes to allow some data of a qualitative nature to be collected. They were also presented before any topics were discussed in order that they would constitute unprompted recall.

The third part of the survey consisted of a grid of 8 questions presented as a 5-point Likert Scale to ascertain the extent of agreement with a number of statements. These were mostly positive in nature but did include the question 'I have received negative or unpleasant dialogue about my work' in order that this possibility was taken into account.

The next section consisted of 6 questions which examine the subject's relationship with Twitter and other social media, and the extent to which that relationship changed of the course of #DrawingAugust, as well as an attempt to quantify followers and shares gained as a result of participation.

The fifth section of the survey contained classification questions such as demographic data likecourteage and gender. It also asked how they would classify themselves as an artist. Questions relating to the selling of work were in this section, and due to the sensitivity of this data options of 'prefer not to say' were introduced here and these questions were positioned near the end as recommended by Bradley (2013).

The last question allowed freetext general comments about #DrawingAugust which was to allow any factors not anticipated to come out and also as a courtesy to the organisers of drawing August.
The questionnaire piloted on a small test sample prior to launch in order to check that the questions were understood and logical, and that the answers were recorded correctly.

5.3 Execution

The questionnaire was disseminated to Twitter users via a link embedded in Tweets sent out by @KardiSom and the organiser @OlderThanEvil from 22nd – 31st December 2013. Responses were received up to 23rd January 2014.

The response rate was relatively pleasing. A limitation of this study is that the sample is too small to be statistically robust; however as a proportion of the population of interest, it is significant (28.5%). Conducting this survey during the Christmas Holidays may have had a negative impact on response rate. A more likely factor is that potential subjects may simply not have seen the call for participation in their Twitter timelines.

As the Phenomenon of Interest was 'Participation in #DrawingAugust' it was not clear who was going to respond. In the event there was a spread of responses across genders. The age groups tended towards the 35-64 bands. In terms of both Twitter experience and Artistic experience, the sample spanned both ends of the spectrum – it was pleasing to get this cross section as it would facilitate cross-tabulations that are more meaningful.

5.4 Analysis

The data from the online forms were exported into SPSS and the findings are presented in both percentage format and through SPSS data analysis to gain insight and search for any potential correlations in the data collected. The verbatim comments were coded and analysed for themes and sentiment.

6. Findings

The sample consisted of 57 Twitter users, one of whom was removed from the sample as they failed the screening question.

6.1 Demographics

As can be seen in Figure 2, 72% of the respondents were in the age bracket 35-54 and another 18% were in the 55-64 category. No respondents were in the 18-25 group. This makes for an interesting cohort as Twitter in general has a different age demographic; 47% of 18-24 year olds use Twitter compared with 16% of 55-64 year olds (Kinetic, 2013).
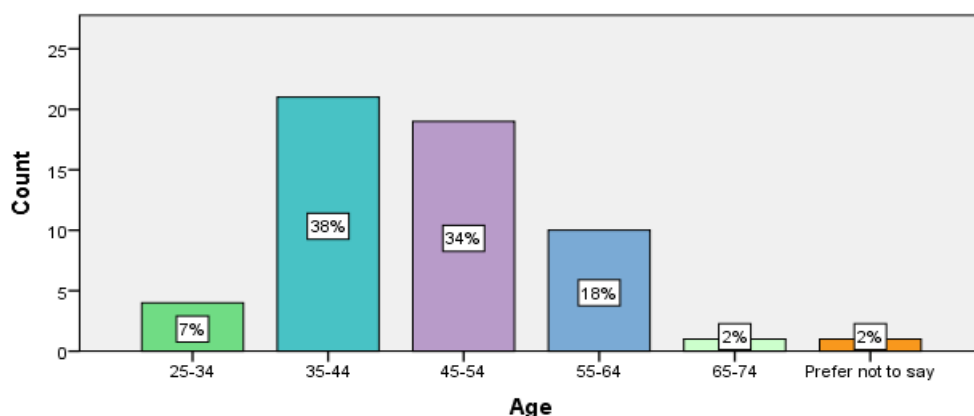
Figure 2. Age profile of Respondents

The gender split was biased towards female (67%) compared with male (33%)

When asked how they would describe themselves as artists, 5% said they were Absolute Beginners, 32% described themselves as Recreational artists, and the same number chose the description 'Semi-professional'. 23% were Professional artists and another 7% preferred a different description ranging from 'Struggling Art Student trying to make a living at it' to 'Professional but retired'.
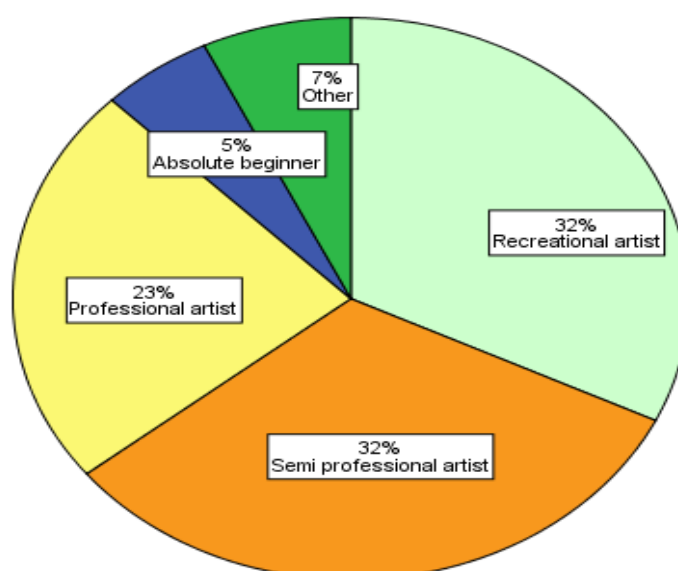
Figure 3. Answers to "How would you describe yourself as an Artist?"

In a bid to establish how business-oriented the participants were at the start of #DrawingAugust, they were asked what their normal sales output was.

23% of people preferred not to say. This could have been for a number of reasons; possibly they could not quantify their sales. It is common for people to call themselves professional artists while not actually being economically active or making a living at it. Furthermore it is the sort of activity that sometimes operates in a grey market – i.e. a cash enterprise without income tax or reporting. For this reason people can be reticent to talk about it. Others may simply consider it a private matter and not wish to share it.

Of those who did select a category to describe their sales, 45% said they rarely sell their work. 18% said their sales represent £1-£100 per month. Of the other 4 categories £101-£250, £251-£500, £501-£1000 and £1000+ each had 4% which represents 2 respondents for each of those bands.
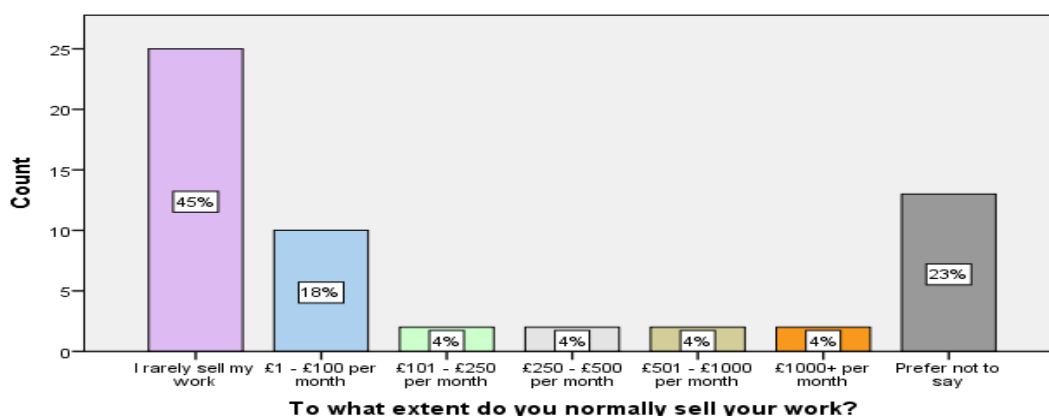
Figure 4. Answers to "To what extent do you normally sell your work?"

When the description is cross tabulated with the normal monthly sales value, it can be seen that the two largely corroborate one another, with the 'Professional Artists' accounting for all of the larger value sales categories, while the 'Recreational Artists' account for most of the 'I rarely sell my work' category.

	NormallySell						
	£1 - £100 per month	£1000+ per month	£101 - £250 per month	£250 - £500 per month	£501 - £1000 per month	I rarely sell my work	Prefer not to say
Absolute beginner	0	0	0	0	0	3	0
Former art student struggling to be professional	0	0	0	0	0	1	0
I do not label myself	0	0	0	0	0	1	0
It is not my "day job", because I'm retired. I do, however work on a professional level, and sell.	0	0	0	0	0	0	1
Professional artist	1	2	0	0	2	2	6
Recreational artist	2	0	0	0	0	15	1
Recreational but with professional experience as a graphic designer	0	0	0	0	0	1	0
Semi professional artist	7	0	2	2	0	2	5
	10	2	2	2	2	25	13

Table 5. Crosstabulation – Artist description / Estimated Monthly Sales

6.2 Relationship with Social Media

The subjects were asked to describe the extent of their experience with Twitter at the start of #DrawingAugust. This was to enable research into the question of whether Art could be a means to engage with Twitter as well as vice versa.

Over a third of the respondents were either Absolute Beginners or Fairly New/Inexperienced with Twitter (5% and 25% respectively). 23% described themselves as Moderate in their Tweeting habits, while 32% said they were Experienced/Regular Tweeters. 13% considered themselves Very Active on Twitter. This represents a good spectrum for analyses.
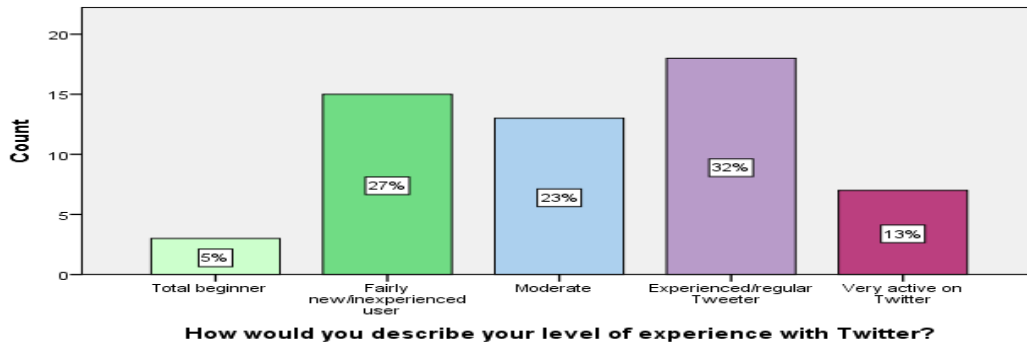
Figure 6. Answers to "How would you describe your level of experience with Twitter?"

As well as Twitter habits, the other Social Media habits of the respondents were taken into consideration. The question asked which other Social Media they used regularly (which was defined as once a week or more).

As expected, all of the respondents said Twitter, most said Facebook. Unsurprisingly among a creative community, the more visual Social Media such as Pinterest and Instagram also featured.
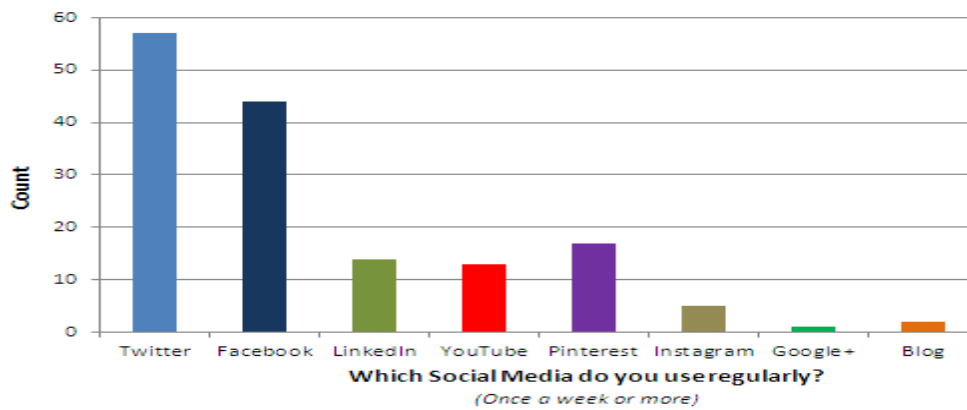
Figure 7. Answers to "Which Social Media do you use regularly?"

6.3   #DrawingAugust Specific Questions

Moving towards the questions that relate specifically to participation in #DrawingAugust we first sought to quantify the level of activity / engagement of the respondents. The question asked 'How many times did you post a drawing to #DrawingAugust'. The nature of the project meant that really the maximum possible number of posts during August would be 31 (there being 31 days in the month). As 43% of the respondents answered 30+ this would indicate a very high level of engagement. As the next highest scoring category was the 20-29 posts group at 25% this means that over two thirds of our sample posted 20 times or more to #DrawingAugust. A limitation of this statistic is that we do not know the causal relationship. It may be that those most highly engaged individuals would anyway have the highest propensity to self-select to participate in the research. As expected there are no respondents who answered '0' to this question – the earlier non-participant having been removed from the sample at the screening stage, however this option was left in as a second screening question.
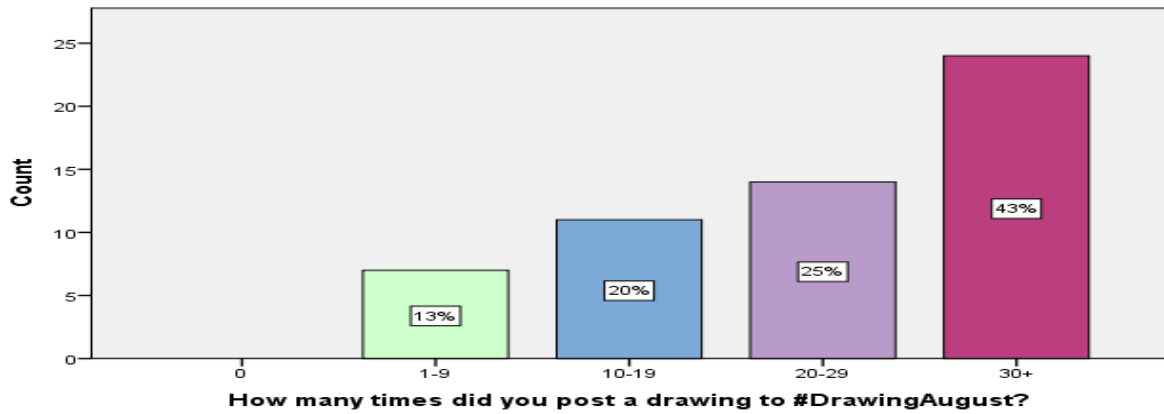
Figure 8. Answers to "How many times did you post a drawing to #DrawingAugust?"

Participants were then asked 'What did you expect to get out of participating in #DrawingAugust' – an unprompted free-text question. The responses were coded and the sentiments visualised in the graphic below (Figure 9). By far the biggest unprompted response was 'Make me draw every day' – 23% of all the mentions related to this. 'Challenge / Discipline' was next highest with 14% of the mentions.
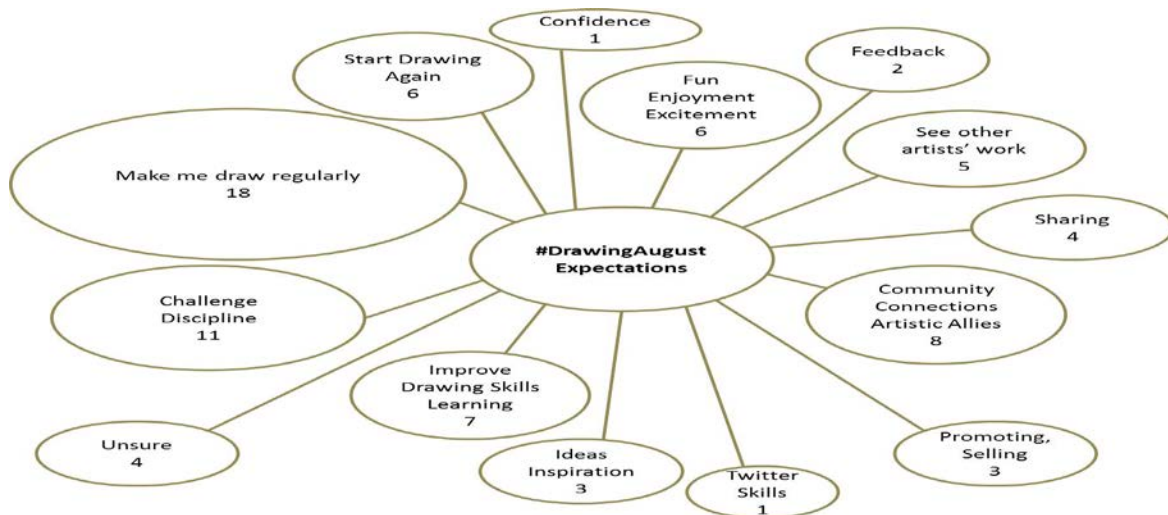
Figure 9. Answers to "What did you expect to get out of #DrawingAugust?"

Participants were then asked 'What did you actually get out of participating in #DrawingAugust?'

Overall there were twice as many responses for the 'actual' than 'expected' question, with most responses containing more than one category of response. The responses were coded using the same coding frame and the responses visualised in Figure 10 below. Response categories which increased in volume are indicated by ↑, a decrease is denoted by ↓ and the same number is indicated with =.

The categories most notably increasing in number of mentions from 'expectations' to 'experienced' are:

 'Community, Connections, Artistic Allies' with 24 mentions compared with 8; 'Fun, Enjoyment, Excitement' with 16 compared with 6, and 'See other Artists' work' 15 compared with 5.

The biggest rise in percentage terms is 'Twitter Skills' capturing an increase in confidence with Twitter and follows/retweets. This rose from 1% to 8% of the mention.

The biggest decrease in number of mentions was observed in 'Make me draw regularly', and 'Start Drawing again' and 'Challenge/Discipline' also fell.

There were 3 new categories of response recorded – the largest of these was 'Friendship' which was observed 10 times, along with 'Support' and 'Achievement' with 5 mentions each respectively. Most interesting of these is use of the word 'Friendship' which is quite an emphatic word to use in connection with only connected in the virtual space. On a few occasions this was qualified to 'Twitter Friendships", nevertheless the respondent clearly intended to indicate that a relationship of some value had been established.

There was one case in the study of a negative response which the responses to both this question and the following question recounted in some detail an ill-tempered exchange between two members of the forum. This survey respondent referred to 'bullying behaviour' and 'celebrating mediocrity'. This response was very much at odds with the rest of the data, but reflects one person's experience of participation nonetheless.
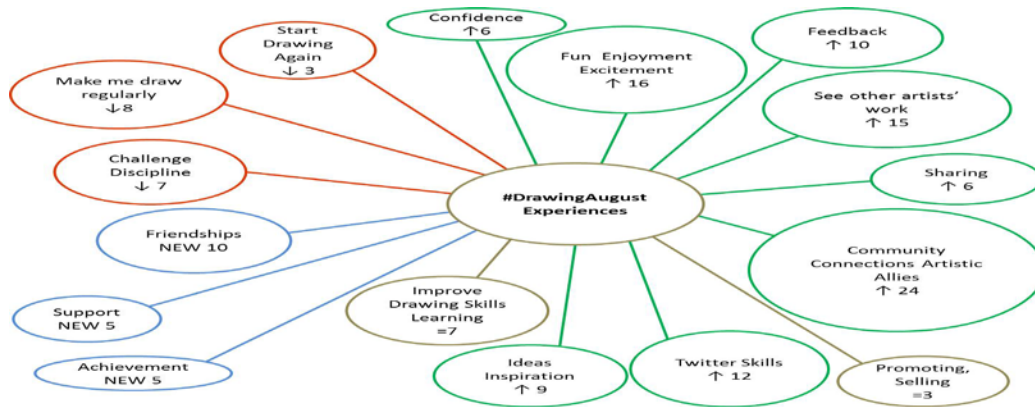
Figure 10. Answers to "What did you actually get out of #DrawingAugust?"

These are collated in the table below (Table 11) for ease of comparison.

Mentions		Expected	Experienced	
Make me draw regularly		18	8	
Improve my drawing skills / learning		7	7	
Promote/Sell my work		3	3	
Start drawing again		6	3	
Fun / enjoyment / excitement		6	16	
Community / connections / artistic allies / belonging		8	24	
Unsure		4		
Challenge / Discipline		11	7	
Encouragement / motivation			11	
Feedback		2	10	
Ideas / inspiration		3	9	
See other artists' work		5	15	
Sharing		4	6	
Develop Twitter skills / followers		1	12	
Develop confidence		1	6	
Support			5	
Friendships			10	
Achievement			5	

Table 11. Answers to "What did you expect to get / actually get out of #DrawingAugust?"

Participants were asked 'Has participating in #DrawingAugust changed your perception of Twitter' – to which 46% answered No. Those that said Yes had the opportunity to explain why and the main sentiments expressed (in descending frequency) were:

"I view Twitter in a more positive light / Had heard so many negative comments / Much nicer and more friendly than I expected"

"Made me realise the global reach of Twitter / Appreciate the international dimension"

"A more useful medium than I realised / I discovered the power of the hashtag

"Felt a sense of community for the first time / My followers and I really communicate now"

"I thought my account would be all about my professional side – but it's all about art"

Two of the comments were more negative in tone:

"It is still a very shallow pond / Yes slightly in a negative way"

Moving to a more directly commercial question; Of the 41 respondents who answered 'To what extent did #DrawingAugust enable you to sell more of your work?" only 5 had received commissions or sales as a result, while another 10 believed that it had enabled them in an indirect way, such as creating an opportunity to put on an exhibition, or putting them in touch with a prospective customer. 7 did not believe it had any effect and 3 didn't know whether it had or not.

9 of the people who answered the question felt it was not applicable to them while 7 more pointed out that selling was not the point of #DrawingAugust.

7. Discussion

The purpose of this study was twofold; to better understand the way artists engaged with #DrawingAugust forum, and to examine the extent to which artists who engaged in this online community exhibited entrepreneurial behaviour.

The results indicated firstly that the extent and depth of engagement with #DrawingAugust was significant among those who answered the survey. In the volumetric measures around participation such as Posts, Followers and Shares, the group scored highly, indicating a correspondingly high level of engagement. There was an interesting contrast between what participants expected to get from taking part, and actually got. The main findings here reflect a shift in emphasis from motivation and discipline as expectations, to collaboration, friendship and fun actually experienced.

The demographic profile of the respondents indicated that, if representative of the population of #DrawingAugust participants, they were somewhat older than typical Twitter users, but covered a wide spectrum of both familiarity with Twitter and experience as artists.

When considering sentiment, the analysis from the verbatim comments best captures the mood, which is almost universally posititive. Furthermore the experience seems to have been transformative for participants in three main ways; artistic practice, sense of community and Twitter experience.

When considering whether the participants were displaying entrepreneurial behaviour, the demographic classification questions were revealing; A large proportion of the people in the sample were perhaps not predisposed to be entrepreneurial in the commercial sense with their art, either due to life stage (some were retired or otherwise out of the labour market) or due to their development as an artist. Over half of those surveyed, however, did classify themselves as being professional or semi-professional artist, and might reasonably be expected to want to sell their work.

There was limited evidence that #DrawingAugust had a direct impact on sales (this was reported in 5 instances) however a larger number of people identified indirect ways in which participation would lead to sales.

In addition to looking at direct commercial activity, the study considers whether there is any correlation between the seven character traits of the entrepreneur identified in the literature, and the experiences identified in Figure 10.

It might be assumed that community of artists would have a propensity to score highly on the attribute of 'Creativity & Imagination'. In terms of #DrawingAugust enabling this trait 'Ideas and Inspiration' were captured. Several of the participants identified a sense of 'Achievement' from participation. There is also the very tangible outcome of Retweets and Favourites – public displays of advocacy which several mentioned brought them pleasure. These factors could be mapped against 'Need for Achievement'- another of the traits of the entrepreneur identified in the literature. Part of the categorisation of innovative behaviour under the Classical School of Entrepreneurship relates to combining but also creating opportunities. (Barton & Cunningham 1991). #DrawingAugust enabled this in several ways; 'See other Artists' work', 'Ideas & Inspiration', 'Community, Connections, Artistic Allies' all enable this entrepreneurial trait. It could also be argued that those artists who have adopted Twitter and participated in an art-based forum have already demonstrated a level of opportunity identification. Several participants identified an increase in confidence as an outcome from participating in the forum. It could be argued that people with high levels of self confidence would not need an external enabler.

In summary, there is evidence that four of the seven characteristics associated with entrepreneurship have been enabled by participation in #DrawingAugust for some of the participants.

8. Conclusion

This paper explored the extent to which artists were enabled to behave in an entrepreneurial way by participating in a forum on Twitter. Findings from this study suggest that some of the characteristics of entrepreneurial behaviour were enabled by participation in #DrawingAugust, however there is limited evidence to suggest that this goes as far as sales for most artists surveyed.

Art as a vehicle to engage with Twitter was also researched, and for both the organisers and those surveyed, the event was deemed an important and successful use of this social medium. Some participants found that participation changed their perception of Twitter in a positive way, with a sense of community and friendship which in some cases extended beyond national boundaries being the largest unintended consequence of taking part.

#DrawingAugust was the forum examined in this paper. There have been successors #PaintSeptember #PrintOctober #PortraitNovember #StillLifeDecember #SketchJanuary #LineFebruary – many of the participants moving from one forum to the next. Arguably #DrawingAugust was the most successful – possibly because it was the first, and also the timing facilitated a high level of engagement due to being in the school holidays (it was observed during conversations that many of the participants work in education).

It would be interesting to do a longitudinal study following the development of this online community through the forums. Alternatively it would be possible to extend the research by identifying a forum in a different field and comparing the relative entrepreneurial traits with this set of data.

There are plans for #DrawingAugust to reconvene in 2014.

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Shaping the Future through Cybernetic Approaches of Social Media Monitoring

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Abstract: Scientific research and development programs (R&D programs) are national instruments to sustainably secure innovative capability and competitiveness. Due to an increasing rate of change in all societal functional areas, these programs have to be continuously advanced, but also new R&D programs have to be tendered. Prospectively more societal impulses have to be taken into account for the advancement of R&D programs and the ex-ante determination of program contents. Here, the methodical basis is characterized by the analysis of social needs. In terms of substance, sources of Social Media (SM) work out perfectly as data or text corpora: Everyday life is becoming increasingly digitally networked and a large part of interpersonal communication is realized via SM. SM represent a pool of qualitative and quantitative data in order to reflect societal moods. It can be regarded as untouched, raw and unevaluated data. Existing methods of Social Media Monitoring (SMMO) use this information as a basis for trend analysis, issue monitoring and the detection of influencers. SMMO is no temporal specific action, but rather an open-ended task. The conventional application fields of SMMO primarily relate to commercial market research, corporate communications and public relations. In this context SMMO is used with the intent of an overall social and political use, interest or benefit. A new approach is currently being developed by considering methods of system theory and cybernetics. Using this theoretical, system-oriented framework, R&D programs can be constructed as socio-technical, complex living systems. Finally, cybernetic SMMO allows for a continuous and active involvement of the society into politics. It supports program management and research promoters of publicly funded R&D projects by taking into account social impulses for the advancement of R&D programs and the ex-ante determination of program contents. Cybernetic SMMO enables an active shaping of the future according to societal developments, trends and needs.

Keywords: Social Media Monitoring, Social Media, Cybernetic Approach, Trends and Pattern Identification

1. Introduction and Problem Statement

Large scientific R&D programs with a duration of five up to ten years are instruments of the German federal government to sustainably secure Germany's innovative capability and competitiveness (cf. Trantow 2012; Hartmann et al. 2006). Shaping and steering these programs depicts a complex challenge due to their strong application reference on the one hand and due to an increasing rate of change within the respective thematic focus on the other hand (cf. Trantow et al. 2012). Trends like digitalization, automation etc. especially enforce short cyclic changes, wherefore R&D programs have to be continuously adapted (cf. Z_punkt GmbH 2013). A complete ex ante determination of program contents and the output of funded research projects hence cannot stand the dynamics of socio-economic developments. Flexibility and adaptability, as crucial characteristics of contemporary individuals and organizations (Sennett 2006), thus must be reflected in the requirements for R&D programs.

As Trantow (2012) explains, permanent organizational learning processes are required to allow a utilization of generated research results and other program outputs in order to shape funding activities. In order to enable learning processes, a continuous monitoring and reflecting of relevant, R&D program-related transdisciplinary information is necessary. This allows going beyond own program results and particularly considering the international research context. Relevant information is processed by monitoring and reported back to different functional units of the R&D program. So far, monitoring activities are basic elements for the constitution of learning processes in R&D programs.

In addition to the previously mentioned monitoring activities, more social impulses will prospectively be taken into account for the advancement of R&D programs and the ex-ante determination of program contents. Approaches such as the citizen dialogues by the Federal Government, EU citizens dialogues, Google Hangouts with the German Chancellor or events such as "Dialog und Kongress – Fortschritt gestalten" by the state government of North Rhine-Westphalia (cf. Bundesregierung 2013; MIWF NRW 2013) illustrate how the

dialogue between politics and society increasingly gains importance. Moreover, SM also play a fundamental role in this context, because everyday life is becoming increasingly digitally networked and a large part of interpersonal communication is realized via SM (cf. Z_punkt GmbH 2013). On typical online platforms such as wikis, forums, blogs, microblogs and social networks, people depict current snapshots as well as opinions. Hereby they digitally discuss issues, problems and developments of politics and certain other societal areas such as labour, education or economy etc. (cf. Osswald 2010). Thus, SM clearly reflect societal moods. Here, monitoring SM will allow for a continuous and active involvement of the society into politics. To approach SMMO, a delimiting theoretical framework is needed. Feed backed steering-, control- and regulation-processes in complex systems have to be considered, wherefore a cybernetic and system-oriented approach is being provided. This results in the following research question:

- How can a cybernetic Social Media Monitoring (SMMO) be designed in order to support the continuous advancement of existing as well as the development of future R&D programs?

The main objective of this paper is the development of a cybernetic approach of SMMO in order to identify and reflect societal moods from SM for an ongoing advancement of R&D programs. A cybernetic approach of SMMO shall therefore allow an active shaping of future according to societal developments, trends and needs.

2. Social Media, Monitoring and Cybernetics

2.1 Social Media

"Social Media are online tools and platforms, that allow internet users to collaborate on content, share insights and experiences, and connect for business and pleasure" (Beal and Strauss 2008).

Communication via internet has fundamentally changed during the last years. The classical one-way communication represented by an exclusive availability of static websites belongs to the past. With Web 2.0 applications, respectively the social web, users have many opportunities to communicate across SM platforms such as wikis, forums, blogs and social networks with each other and various stakeholders. Within the social web, a large amount of content is being created that is being replicated by a large number of authors and commented on by an even larger number of readers (cf. Finzen et al. 2010). This results in user-generated content that is detectable and accessible to anyone on the web. Three factors of the social web are particularly noteworthy (cf. Kasper et al. 2010; Finzen et al. 2010):

- *Trust:* User-generated information is often subjective and expresses a personal opinion, which is perceived as credible by other users.

- *Time:* Information is created and spread within a few moments.

- *Mass:* Anyone can create and distribute information. User generated information is constantly newly combined and networked (cf. Kasper et al. 2010).

The contemporary society is characterized by so called prosumers – simultaneous producers and consumers – who determine the content in the social web. The content is being shared and spread and nearly each action is (critically) assessed by the social web. Especially striking actions that are rated critically are virally spreading (i.e. even more quickly) on the social web (cf. Lange 2011).

Content on the social web is very heterogeneous: There are platforms that specialize in certain media formats such as images, video, and music, while others are defined rather by their functions, e.g. public relations, evaluation or information. In most cases, a proper distinction is not possible and the boundary between user generated content and editorial content is blurring. Nevertheless, Table 1 provides an overview summarizing various types of conversation channels according to different categories.

2.2 Social Media Monitoring

The increasing importance of social networks and associated platforms in daily communication explains an increasing demand to follow and understand the conversations within the networks. SMMO allows just that […] (cf. Lange 2011). SMMO is characterized by the observation and analysis of conversations plus the resulting opinion-forming on the social web. Here, the focus is primarily set on blogs, social networks, microblogs and platforms that allow users to easily publish content online. Hence, trends can be captured and polarizing platforms as well as influencers can be identified with SMMO (cf. Osswald 2010). SMMO refers exclusively to

user generated content. The core of SMMO is the identification of relevant content, whereas its potential to gather quantitative and qualitative data becomes obvious. User generated content is not only being listed, but also analyzed and interpreted. In comparison to that, web monitoring refers to the mentioning of topics, products or comparable aspects across the whole web (cf. Lange 2011).

Table 1: German conversation channels on the social web (source: own representation based on Ethority 2012)

Examples	Conversation Channels		Examples
Facebook.com GooglePlus.com	Social Networks	Interest and Curated Networks	Xing.de Linked.in
IOFF.de Gulli:Board.de	Forums	Collaboration	Doodle.com Mindmister.de
Wikipedia.com Wikileaks.org	Crowdsourced Content/Wikis	Reviews/Ratings	HolidayCheck.de TripAdvisor.com Idealo.de
Wordpress.com eBlogger.de Tumblr.de	Blog Platforms and Communities	Social Bookmarks	MisterWong.de Delicious.com
Twitalyzer.de Kred.com	Influence	Instant Messaging	Skype.com Icq.com
Twitter.com Bleeper.de	Micromedia	Live Casting/Lifestreams	lifestream.fm Justin.tv
Twitpic.de Tweepi.de	Twitter Ecosystems	Social Shopping/Social Commerce	Groupon.de DaWanda.de Brands4Friends.de
GooglePlaces.com Foursquare.com	Location Based Services	Reputation	Yasni.de 123people.de
Wer-Weiss-Was.de GuteFrage.net	Question & Answer Sites	Documents/Content	Dropbox.com Slideshare.net
Youtube.com Veoh.com Vimeo.com	Video	Gaming	Farmville.de Comunio.de
Last.fm Spotify.com	Music	Mobile Apps	Runtastic Evernote
Flickr.com Picasa.com	Picture	Social Media Tools	Addthis.com Netvibes.com

SMMO can be operated as a specific static action, but, as well as most of all web mining applications, provides the best results by a continuous operation. Moreover, the observation of the social web and the derivation of findings can be understood as interaction of an individual, repetitive and coherent set of steps (cf. Chap. 3) (cf. Kasper and Kett 2011).

The conventional fields of application for SMMO primarily relate to commercial market research, corporate communications and public relations (cf. Osswald 2010). In this case, non-commercial, scientific and political intentions are being focused on. In the following part, three major fields of application are being identified. **Influencer Detection:** SM allow personal dialogues. Users post their opinions through various channels (cf. Kasper and Kett 2011). Through SMMO, especially in forums and among bloggers, highly active individuals who influence the opinions of other readers can be identified. These opinion leaders can be involved in policy-making or could even be gained as advocates in case of crises. They often enjoy greater confidence in their web community then conventional political representatives (cf. Kasper et al. 2010).

Trend Analysis: Trend analyses provide the potential to cluster content of SM and filter out relevant information. The special feature of SMMO is a continuous online monitoring. Thus, developments can be monitored and analyzed, which can evolve into trends or trends that can be derived from these developments (cf. Kasper et al. 2010). Here, also deficit analyses are applied, which derive societal needs on the basis of available postings. In the original, conventional field of market research these types of analyses focus on the development and reputation of brands and certain products, whereas the search queries in this research project are unattached to products and brands.

Issue Monitoring: Many topics are being discussed firstly on the social web, before being published by mass media such as newspapers and television. Through a continuous SMMO, emerging crises and possible critical issues can be identified more quickly, which facilitates a better response or defense. SM can for example be used to forecast epidemics or pandemics in order to prevent mass outbreaks, as the EU-founded project MECO shows (cf. Laage 2012; MECO 2010). Thus, the findings from user generated content can support analyses of emerging issues and optional reactions. Important multipliers or influencers, should especially be monitored constantly, because they can have a positive or a negative impact on other participants of the social web (cf. Osswald 2010; Kasper et al. 2010).

To sum up, all of the three application fields show how SMMO can affect the management or advancement of R&D programs. The respective thematic focus of a certain R&D program determines which field to focus on.

2.3 Cybernetics and System Theory

To start developing an approach of SMMO in order to support the ongoing advancement of R&D programs (cf. Chap.1), a scientific theoretical framework is needed. A system-oriented perspective enables a holistic and integrative consideration (cf. Henning 1985) of relevant factors for the development of a SMMO approach that focuses on R&D programs. In terms of a system-oriented and cybernetic understanding, R&D programs are considered as complex socio-technical or living systems. Such an approach makes it possible to treat individual entities of R&D programs as abstract units so that an adequate monitoring approach can be developed. As monitoring supports the management of such systems, aspects of cybernetics are being taken into account that concern feed backed steering-, control- and regulation-processes in complex systems (cf. Ashby 1956; Lattwein 2002; Hartmann 2005; Strina 2006; Brosze 2011; Trantow 2012; Welter 2013). In order to promote the development of a *cybernetic* SMMO approach, central concepts of system theory and cybernetics will be described in the following paragraph.

System and Environment: As an interdisciplinary and integrative constructivist insight model, the modern system theory primarily works out as a system-environment theory (cf. Willke 2001). System theory offers the possibility to regard any entity as a system and to distinguish it from its environment. Thus, for example, the human body is to be constructed as a biochemical system, a central heating as a technical system and a football team as a social system (cf. Trantow 2012). From the perspective of system theory, these very different entities initially have in common that they consist of different elements (e.g. cells and hormones, radiators and pipes, players and coaches) that have certain relationships to each other (cf. Trantow 2012). A system is fundamentally characterized by a holistic context of parts and their relationship with each other, which are quantitatively more intense and qualitatively more productive than their relationships to other elements. This diversity of relations constitutes a system boundary that separates the system and the environment from each other (cf. Willke 2006). Henning (1993) also specifies characteristics of living systems: although these are operationally closed by a system boundary, there are certain relationships to its environment, which are crucial for the existence of the system. This existential dependence implies that a system may increase its own capability of adaptation and survival through the continuous monitoring of changes in the relevant environment (cf. Trantow 2012).

Transformation and Feedback: While the system-oriented perspective primarily aims at structural aspects, a cybernetic perspective emphasizes in particular the functional unit of a system (cf. Strina 2006; Brosze 2011). These processes of exchange with the environment can be described by a functional input-output relation. The system accepts a variety of influences from the environment, it processes and transforms these influences and creates an output that clearly differs from the input. A hot water heater, for example, requires fuel as input and transforms it over the water warming into the output, namely space heating (cf. Trantow 2012). The focused R&D programs in this paper particularly have financial resources as an input and in the context of funded projects transform it into research results as an output. Even if the input from the environment is necessary for the system, not all of the effects are desirable. The same applies to the outputs of the system: a boiler also produces combustion residues and so does an R&D program, which e. g. to some extent produces obsolete information (cf. Trantow 2012).
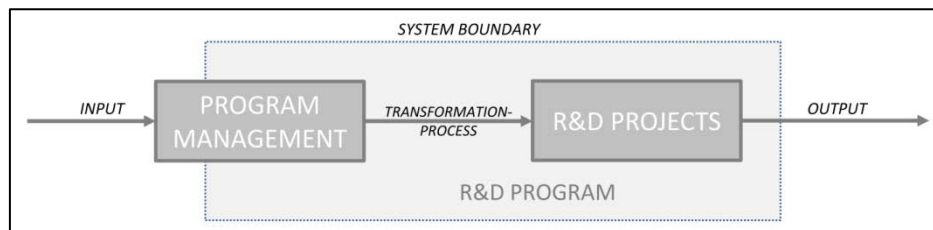
Figure 1: Linear transformation process (source: own representation based on Trantow 2012)

Figure 1 explains the input-output relation as a linear transformation process. The represented idea shows the linearity of input, transformation and output that initially corresponds to a mono-causal effect relationship (cf. Henning 1993). Thus, an impact or effect is always a consequence of a specific cause so that a change of the effect can only be achieved by changing the cause. This, however, does not include the influence of the effect of the cause, the so-called repercussions or feedback. With respect to R&D programs, this means that

the system input not only consists of financial resources, which lead to research results through transformation, but that this output again is an input to the system. If these feedback loops are used by the system, it can be prevented that funds for research activities that have already been worked on are issued. By this means, systems are able to change their behavior through targeted monitoring and feedback of their outputs and thus to initiate learning processes (cf. Trantow 2012). According to cybernetics, feedback processes are an intrinsic characteristic of self-regulating, adaptive and thus learning capable systems (cf. Strina 2006; Henning 1993). Figure 2 illustrates a system integrating a feedback loop.
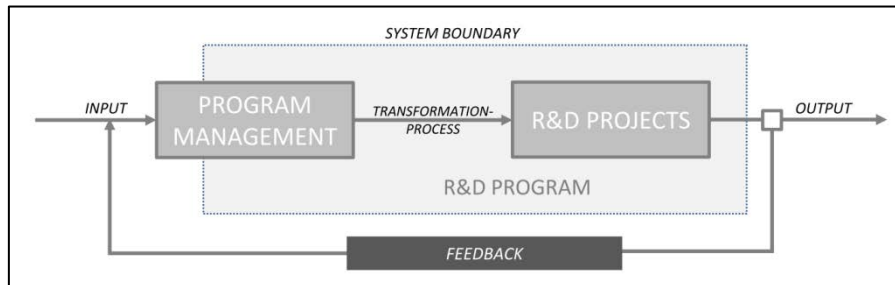
Figure 2: Transformation process with feedback loop (source: own representation based on Trantow 2012)

3. Cybernetic Approaches of Social Media Monitoring

R&D programs are construed as socio-technical, complex living systems. Elements like single R&D projects or the program management itself are parts of this living system, which strongly depends on its environment (cf. Fig. 1-2). This environment is characterized by socio-technical developments, political impulses, natural influences or force majeures (cf. Fig. 3). Figure 3 shows an extended version of the previous figures including SMMO.
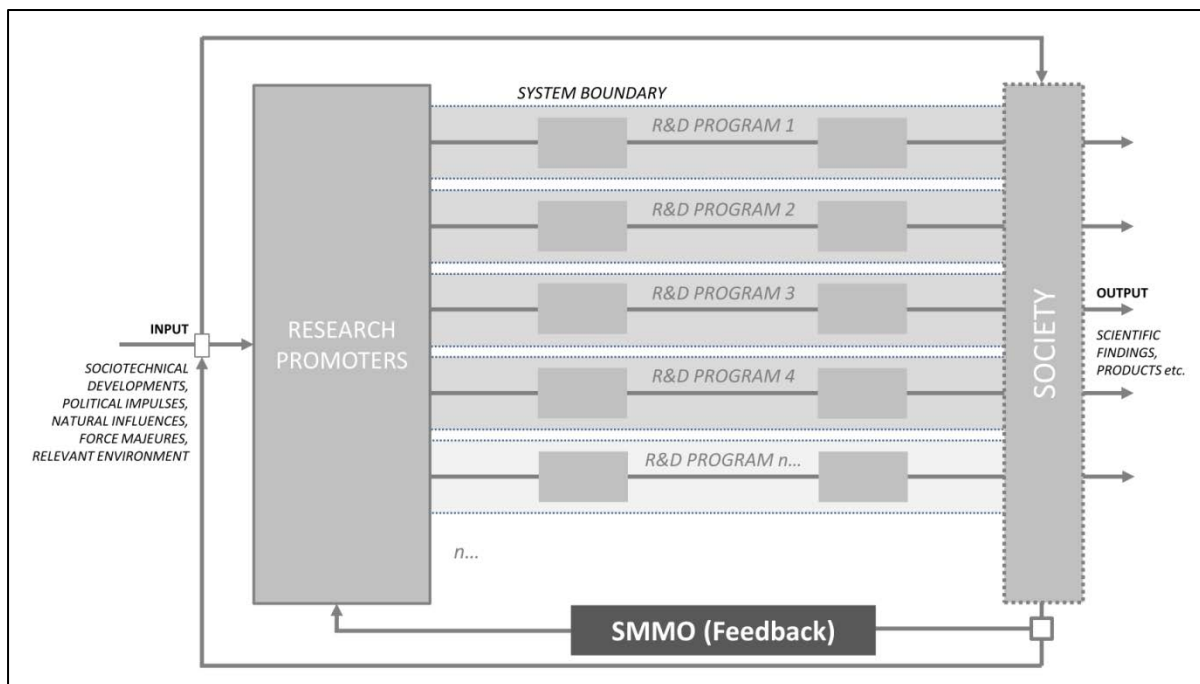
Figure 3: Cybernetic approach of SMMO (source: own representation)

With regard to Figure 3, research promoters, such as the Federal Ministry of Education and Research in Germany, are part of several systems, i.e. different R&D programs. Here, the dark grey systems represent current R&D programs and the light grey systems show future R&D programs. The society represents a wide number of stakeholders, who can also be a part of certain systems or R&D programs. However, the majority of the society is not part of these systems and strongly characterizes the system environment. Of course, political impulses, the relevant environment, socio-technical developments etc. (Fig. 3) are interwoven with society, too. Here, SMMO takes additional supportive functions regarding of program management. SMMO

continuously identifies societal snapshots, opinions and moods concerning content of current R&D programs or future R&D programs and reports these back to the research promoters. In this manner, current R&D programs can be continuously advanced and future programs can be shaped. After the placement of SMMO into a conceptual and thematic framework, the following chapter thoroughly describes SMMO with its several processing steps (Fig. 4). Figure 4 explains the black SMMO-Box of Figure 3 in detail.
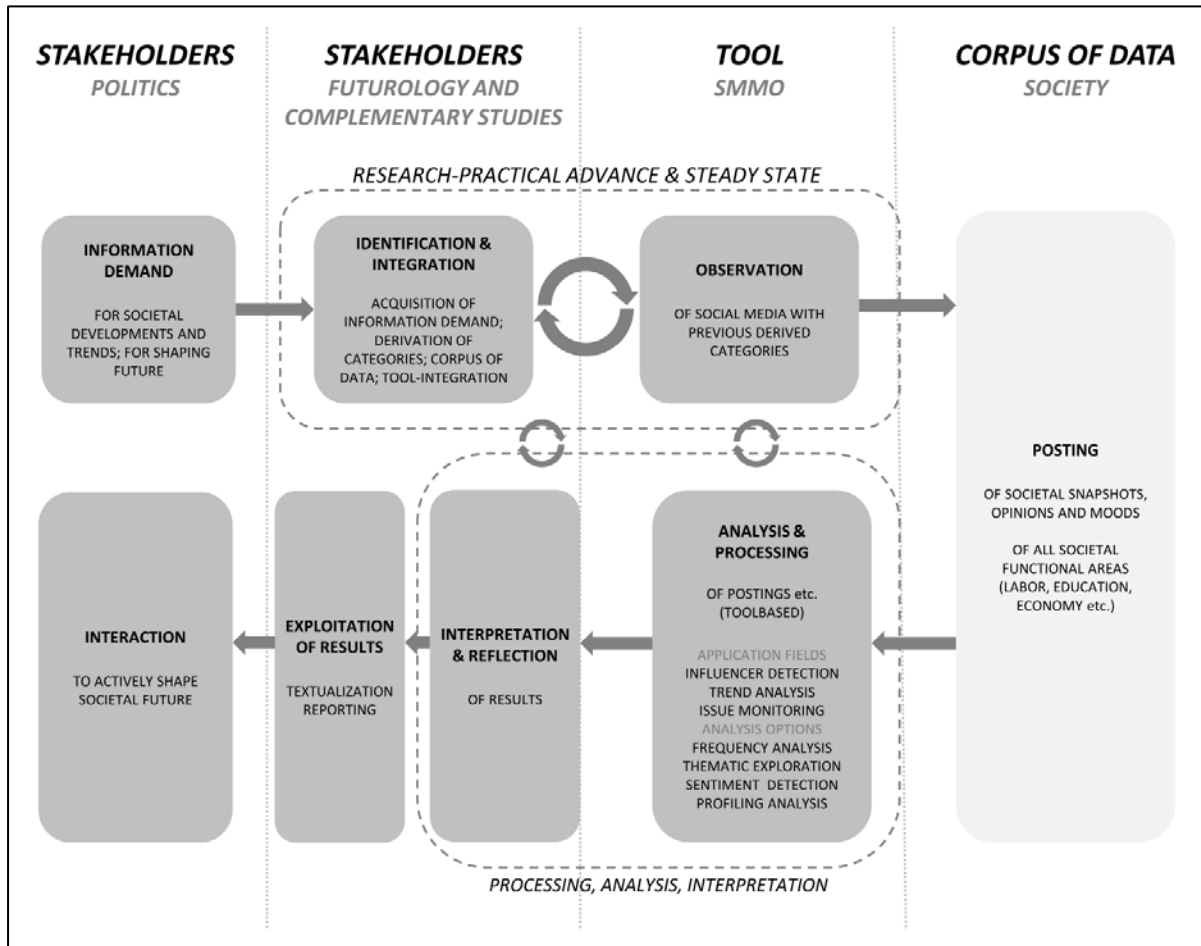
Figure 4: Processing steps of SMMO (source: own representation)

Information Demand: Taking into account the societal developments and trends, R&D programs should be continuously advanced or re-tendered. Citizens, for example, get more involved in this advancement process. The relevant stakeholders are policy makers, such as the German Federal Ministry of Education and Research. Thus target agreements will be made concerning the form of results of SMMO.

Identification & Integration: Here, the need for information of policy makers is initially identified and overarching strategic goals are defined, as these affect all subsequent steps (cf. Finzen et al. 2010). Categories, such as keywords are set for a targeted monitoring in the thematic framework of the corresponding R&D program (cf. Kasper et al. 2010). In addition, a specific corpus of data sources respectively SM (cf. Table 1) is defined. For the detection of trends, especially high-traffic posts (Treads) (cf. Steimel et al. 2010) are suitable. A continuous review and extension of the source is indispensable. In addition, the selection of appropriate social media monitoring tools according to specific requirements is essential (Table 2). After the selection of suitable tools, previously developed categories are integrated into these tools as well as the limited corpus of data. Here, crucial stakeholders come from from Futurology and other complementary studies.

Table 2: Tool evaluation categories (cf. Finzen et al. 2010)

MISCELLANEOUS	OPERATING MODE (WEBBASED OR INSTALLED VERSION)
	KIND-OF-USE (SELF-SERVICE, SELF SERVICE WITH CONSULTING, FULL SERVICE)
	EMAIL ALERTS
	ACCESS FOR DIFFERENT USERS
	USER MANAGEMENT (PROVIDER ODER CUSTOMER)
	DATA TRANSFER & EXPORT
ANALYSIS TECHNIQUE	INFLUENCER DETECTION
	TREND ANALYSIS
	ISSUE-MONITORING
	FREQUENCY ANALYSIS
	THEMATIC EXPLORATION
	SENTIMENT DETECTION (GERMAN)
	SENTIMENT DETECTION (ENGLISH)
	PROFILING ANALYSIS
	MINING PROCEDURES
	CONSOLIDATED DATA
	CORPUS OF DATA ADAPTABLE
	SEARCH QUERY HISTORY
	FULL TEXT ACCESS
	GEOGRAPHY BASED QUERIES
	RELEVANCE EVALUATION
	PROFILES OF AUTHORS
INTERFACE	DASHBOARD WITH DRILLDOWN-FUNCTION
	USER INTERFACE (CLARITY, USABILITY)
	COMMENT- AND FORWARD-FUNCTION
	DASHBOARD ADAPTABLE
	COSTS

Observation: The basis of SMMO is generated by sources that are automatically crawled regarding the predefined search queries and categories (cf. Kasper et al. 2010). The goal is to extract structured data: Depending on the specific subject conditions, for example, certain keywords are included or excluded. Search queries are described in terms of Boolean syntax and are gradually refined. The amount of used search words can vary greatly depending on the topic. By means of creating various queries, various topics can be compared simultaneously (cf. Kasper and Kett 2010).

The processes of *Identification & Integration*, as well as *Observation* are summarized as research-practical advance and steady state, as the steps are mutually dependent. So, for example, during the continuous surveillance, categories or the data corpus have to be adapted continuously, as well.

Analysis & Processing: The main task of this step is the tool-based matching of the specified information demand (e.g. a query) with the amount of documents of the data corpus (cf. Finzen et al. 2010). Filters can further refine the results of a search query. Further analysis can be applied to parts of the results, e.g. regarding time of posting, language, source or geography (cf. Kasper and Kett 2010). In order to serve the mentioned fields of application (cf. Chap. 2.2), there are various analysis options. The analysis options described in the following part are based on different mining methods.

Using *Extraction* methods, contents of documents are being summarized, e.g. in terms of automatic extraction. The *Feature Extraction* only refers to information regarding particular keywords. As a *Bag of Words* model, (vector-based) grammar and sentence structure are being ignored, articles and conjunctions are being sorted out and weighted according to frequency of appearance of the rest. In contrast, the automatic compression provides the most important parts of an original document in form of a summary (e.g. Google search results) (cf. Ahlemeyer-Stubbe 2013). The compression in terms of an extraction provides the most important parts of the original document with phrases, sentences or paragraphs. Using *Classification* and *Clustering,* information is assigned to the classes of a given classification or taxonomy. If the classification should not be given, but is even a mining result itself, it is called Clustering or *Segmentation* (cf. Finzen et al. 2010). *Topic Detection and Tracking* is being used for the detection of important issues of corpus of data by methods of text clustering. Thus, the identification of future trends is possible through the extrapolation of measured data over a period of time (cf. Finzen et al. 2010).

In addition to the mining methods mentioned above, there are various analysis options.

- *Frequency Analysis:* The frequency analysis is a very common method of analysis in SMMO: Counting the number of posts on a certain topic which are being published and indexed within a certain time . Bar or line graphs can demonstrate how topics develop and whether there are significant abnormalities (cf. Kasper and Kett 2010; Kasper et al. 2010).

- *Thematic Exploration:* Using the keyword "Extraction", relevant or frequently occurring words are extracted from a text corpus. In this way, a faster thematic overview is enabled and unfamiliar thematic links show up. Here, tag clouds represent the most common form for theme exploration (cf. Kasper and Kett 2010). The more often a word appears in the examined text corpus, the greater it gets in the tag cloud. Since the size of the word is only a snapshot of the number of mentions, coloration is also used to indicate the time trend of a word. Besides tag clouds, association graphs present another important tool for theme exploration: Relationships between objects can be visually illustrated. Important words are being highlighted like in a tag cloud, but additionally relationships are being represented by lines of different thickness. The semantic information of a compound is often limited to the common designation in the text (cf. Kasper et al. 2010).

- *Sentiment Detection:* The Sentiment Detection allows a display of the development of moods and opinions over a certain time on a given topic. For this purpose, texts are annotated with characteristic values of the individual authors' attitude to suggest whether it is a positive, neutral or negative contribution. This qualitative analysis is one of the most informative features in SMMO, although the automated assignment does not always work correctly (cf. Kasper and Kett 2010). It is still difficult to grasp irony, sarcasm or affable youth language.

- *Profiling Analysis:* To identify opinion leaders, the collection and analysis of personal data is essential. Information such as location, gender, age etc. additionally increases the quality of statements (cf. Kasper et al. 2010). Using profiling analysis, it is possible to show where certain developments and trends take place.

- *Export and Integration:* Graphics, Excel sheets, structured text files etc. are created automatically and can be further processed into summary reports or other media (cf. Kasper and Kett 2010). Using a dashboard it summarizes the main results of analysis and relevant posts at a glance. This (graphical) visualization has a high degree of interactivity so that the data corpus is easily accessible (cf. Kasper and Kett 2010).

Interpretation & Reflection: During the previously described step, information is being analyzed in a tool-based manner and subsequently processed. Now, the main focus of this step is the individual, human-led interpretation and reflection of the results. Depending on the results and the respective significance, there are also feedback loops back to previous steps like *Identification & Integration* – in some cases there is need for further adjustment. Overall, together with the tool-based step *Analysis & Processing,* these steps are summarized as *Processing, Analysis and Interpretation* (Fig. 4).

Exploitation of Results: After the results have been interpreted and reflected, this step is aspiring to exploit those for the fulfilling of the identification demands given in the first step. Depending on the pre-established target agreements, media such as continuous reports, quarterly reports, booklets or other formats are being created.

Interaction: Due to the continuous processing of the results of SMMO, overall societal developments are mirrored into policy-making. Ongoing R&D programs can be advanced as learning systems or new R&D programs can be tendered according to the overall societal demands. In this way, future can be shaped more actively.

4. Summary and Outlook

SM are a promising pool of qualitative and quantitative data to reflect societal moods. To exploit these data, a cybernetic SMMO is currently being developed. Cybernetic SMMO allows for a continuous and active involvement of the society into politics. Using this theoretical, system-oriented framework R&D programs can be constructed as socio-technical, complex living systems. It supports the program management and research promoters of publicly funded R&D projects and programs by taking into account social impulses for the advancement of R&D programs and the ex-ante determination of program contents. Therefore, an active shaping of the future according to societal developments, trends and needs is aspired through cybernetic SMMO. Thus, the interaction between politics and society can improve continuously. Nevertheless, further evaluation studies need to reveal how cybernetic SMMO can be applied within different thematic settings.

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Fostering Academic Success Through the Use of Social Networks in Schools

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Abstract: Social networks are making incredible inroads, taking root throughout society in schools, training centres and universities, among others. This new reality has become so pervasive that it is now seen as an unavoidable dimension of the educational process. Social media has played a growing role in the lives of students, providing them with various platforms on which to have group or individual interactions and disseminate and share content, which in turn exerts a positive influence on identity formation. Furthermore, this shift from traditional modes of communication to interactive and virtual modes of communication have propelled students into the role of broker and producer of new ties, relations and knowledge. This research project, which took place from 2010 to 2013, strove to identify and analyze the understanding of school principals, through a socio-professional lens, of social networks as well as the impact of this virtual mode of communication on school life. This longitudinal study aimed to examine how Quebec school principals understood web 2.0 social networks, and how this understanding could be channeled to foster academic success. The general objectives were to identify and analyze how school principals understood the new means of online communication (web 2.0) made possible by social networks; promote an understanding of social networks and their impact on school life; and identify continuing education activities that could help school principals assimilate these online tools. The resulting paper positions the world of education squarely within the context of virtual communication, which has renegotiated the very fibres of our society. The study showed innovation through the nature of its focus and qualitative analysis, and was relevant within the context of the communication revolution of the 2010s. Moreover, its findings will have a lasting impact on the way this issue is approached. Through the use of the methodology of grounded theory, we were able to put forth propositions relating to the professional practice of principals relating to social media. The analysis of the data collected yielded nine dimensions of understanding: ethical, individual-actor, organizational, pedagogical, philosophical, professional, psychological, relational and technological.

Keywords: web 2.0, social networks, modes of communication, school context, school principals, grounded theory

1. Introduction

The phenomenon of social networks in primary- and secondary-level educational institutions is relatively new in Quebec and our understanding of its impact on the role of principal remains limited. Social networks are making incredible inroads as a virtual means of collective and individual communication, taking root throughout society in schools, training centres and universities, among other institutions. This new reality has become so pervasive that it is now seen and experienced as an unavoidable dimension of the educational process, and this holds true at every level of schooling. Indeed, with social media, students have instant access to positive, albeit sometimes negative, platforms for individual or collective interaction within both their personal and school lives, which exerts an influence on identity formation. In such a context where this network becomes both the vehicle and the means for the facilitation of all types of content creation and consultation, it becomes clear that adults—parents, teachers, school principals—must also participate in this new mode of communication in order to position themselves as resource persons for these young netizens, specifically by providing them with a critical perspective of the many benefits and traps of the virtual world. Young people may provoke and participate in ongoing dialogues populated with a multitude of voices and launch boundless quests for information, but these online interactions can play a role in changing their relationships with knowledge and other individuals. Several educators and school principals have foreseen this shift; they have seen social networks become a significant lever (or, more appropriately, "driver") of the students' identity formation and academic development. While searching to determine the scope and the effects of the entry and rise of social media in schools and to record the understanding of principals with respect to this omnipresent virtual phenomenon, it became clear that Quebec studies seeking to establish links between social media and the management of educational institutions was either limited or nonexistent. In order to address this issue, a consortium of Quebec associations of primary and secondary school principals named the Quebec federation of school principals (Fédération québécoise des directions d'établissements, or FQDE) lent their support to this study, entitled *Fostering Academic Success Through the Use of Social Networks in Schools*. This research project, which took place from 2010 to 2013, strove to identify and analyze the

understanding of school principals, through a socio-professional lens, of social networks as well as the impact of this virtual mode of communication on school life.

1.1 Context

Being active in a virtual group can be quite stimulating and drives this young community of netizens to become involved in all types of projects and seek interactions with others, whether through simple, one-on-one communication or meetings that appear excessive owing to the sheer number of participants and virtual platforms. Thus, through social media, youths develop complex networks of friends, manage to find answers to their queries, connect their school lives to their personal lives (i.e. life outside of school), obtain greater specifications to subject matter taught in school, and interact among one another. However, the flip side of these advantages is that youths can make themselves vulnerable to various people and multiple dangers; moreover, in this realm, there is a greater risk of ethical lapses. Since Quebec youths are obliged to attend school all day for 180 days out of the year, it is crucial that greater attention be paid to this phenomenon and its consequences across three key areas of daily school life: student learning, teaching methods and school management.

1.2 Issue

Given that the phenomenon of social networks knows no borders and is now a fact of life in school settings, school principals have expressed their desire to address this issue head on in order to gain a better understanding of the technological and social changes that are becoming increasingly and permanently ingrained within the institutions they manage. Moreover, it is undeniable that academic success and technological innovation go hand in hand in the 21st century. As such, is it not the responsibility of school principals and education stakeholders to understand how social networks work in order to get in front of or at the very least progress at the same rate of this virtual communication phenomenon? How can they assume a dynamic and pedagogical role that will successfully mobilize all education stakeholders to reach out to youths in a meaningful way... even if this implies reaching out into cyberspace?

To ensure the consistency between the research objectives and the methodology, an online platform called Mahara, provided by the FQDE, was used to conduct this experiment. All participant interactions took place on this platform, which served the dual purpose of placing participants on the same playing field as students through the acquisition of a technological communication tool. The parameters of this platform were defined based on a blogging software used by youths.

1.3 Research Description

This study aimed to achieve a portrait of how school principals understood web 2.0 social networks. The study showed innovation through the nature of its focus and qualitative analysis, and was relevant within the context of the communication revolution of the 2010s. Its findings will have a lasting impact on the way this issue is approached.

Innovative: This study aimed to collect and analyze the needs and expectations of school principals with respect to their understanding of web 2.0 social networks, widely though informally used by primary- and secondary-level students. The study, because it was conducted through an online platform, also served to launch school principals who were members of the FQDE into social networking.

Lasting impact: This project strove to highlight the importance of having a firm grasp on technology, in this case through the participation of Quebec school principals in web 2.0 social networks, in order to optimize the impact of pedagogical activities on academic success.

Relevant: This project reflects how the concerns expressed by many school principals are met with a dearth of answers. It is crucial that this project be scientifically validated as quickly as possible given the speed at which web 2.0 social networks evolve.

1.4 Research Objectives and Participation

The objectives were categorized into three general objectives and four specific objectives.

General objectives:

Identify and analyze how school principals understand the new means of online communication (web 2.0) made possible by social networks; promote an understanding of social networks and their impact on school life; and identify continuing education activities that could help school principals assimilate these online tools and use them to foster academic success. This latter objective could constitute an avenue for further research. Specific objectives:

Help participants become familiar with the proposed methodology; collect pertinent data from the school principals (participants); analyze feedback; create a portrait of the situation for 2010-2011 relating to the needs and expectations of school principals. (Data was collected over a period of 24 weeks, from November to June.)

Twenty-five (25) principals (communications officers) representing their respective professional associations and who were members of the FQDE accepted to take part in this project.

2. Frame of Reference

This chapter refers to social media as a phenomenon of instant communication that has social and pedagogical spinoffs when used as a learning support tool in an educational context.

2.1 The Phenomenon of Instant Communication

Instant communication has emerged as a socio-technological phenomenon of the globalization of virtual interactions. The wave of social media has hit every continent, although different countries have experienced different rates of use. The Quebec population has been no exception. Indeed, before 2009, research was invested in discovering, exploring and determining the best ways different age groups could appropriate and become familiar with social media (CEFRIO, 2010). In fact, in 2009, this research and innovation centre published a report on Generation C entitled "12-24 year olds: Drivers of organizational change" (*Les 12-24 ans — Moteurs de transformation des organisations*), and CEFRIO data confirmed the growing trend and interest in social media. The report also mentioned that the use of social media intensified between 2009 and 2010, with 78% of Quebeckers reporting visiting or using social media platforms. Young people (18-24 year olds) were found to post the most comments on this type of medium and constituted the most significant driver of rising use. There was also a strong increase in the use of networking websites in Quebec since 2009, and in 2010, a higher proportion of Canadians were on Facebook than any other population on earth. The most active users were in the 18-34 year age group, but the 35-54 year age group has been using social media in much greater numbers since 2009. Young people now conduct the bulk of their research for homework and school projects online (Giroux and Mathieu, 2011), since "the more information people find online, the greater their need for information" [translation] (Charest and Bédard, 2009); this paradox must be considered when analyzing the needs of school principals. This paradox also confirms the evident interest of young people in social media and the risks of addiction presented by this mode of communication. The literature confirms the existence of a variety of means of communication in the world of social media, which for the most part can be classified (Cavazza and Fréderic, 2010) into seven categories: publication, sharing, discussion, business, localization, networking and games. From this classification, two communication platforms clearly stand out, given their almost universal popularity and large audience—that is, Facebook and Google, both of which actively strive to and succeed in meeting the social media-related needs of users. Finally, although Twitter has fewer users, it has gained incredible ground as a form of instant communication.

2.2 Impacts

Social media was initially designed primarily for socializing, entertainment and content sharing. Despite this, the new technologies can sometimes prove to be a source of concern for parents and other players in the education sector. The boundaries between one's private life and public life and between the real world and cyberspace can become blurred. "Infractions generally result from the negligence of ill-informed users" [translation] (Jézéquel, 2011). To help schools and school boards become proactive in their use of these new technologies, the Quebec government came out with a reference tool, "Cyberbullying: Let's work on it together!" (*La violence dans l'espace virtuel: ça vaut le coup d'agir ensemble!*) as part of its 2008-2011 Action Plan to Prevent and Deal With Violence in the Schools. However, "the Internet gives individuals a uniquely

flexible and powerful tool with which to get organized around just about any end and engage in a participatory democracy" [translation] (Dagnaud, 2013).

2.3 Learning Tools

Although Twitter is considered by many as a waste of time or a useless application, it can nonetheless be an incredible resource and timesaver for school principals (Norris and Soloway, 2010). Twitter facilitates participation in personal learning networks, which pushes new, emerging ideas forward and ahead of older ideas. Finally, electronic means of communication and social media can be useful if they are used with caution and professionalism. For instance, they can be used as pedagogical tools or for professional development (Ontario College of Teachers, 2011).

2.4 The Use of Social Media in an Educational Setting

According to Kite et al., (2010), social media is primarily intended for socializing, entertainment and the sharing of interesting content with the members of the user's personal learning network. The authors share in the widely held opinion that there is a need to set rules and frame the use of social media, notably by introducing a user charter, a code of ethics and training for users to allow them to gauge the quality of positive use of social media in schools. Moreover, learning to use technology and mastering technological competencies is deemed to have a positive impact on helping users adopt these media. However, an inappropriate use of social media, specifically for entertainment purposes, can have a negative impact on study time (Lei, 2010).

2.5 School Principals and Teachers

School principals are responsible for promoting the ethical behaviour of students. As such, they must ask themselves, should they be protecting their students from the dangers of the Internet or giving them free rein of expression? It is worthwhile to note that the concept of FRIENDS denotes nothing more than personal or group contacts (Minotte, 2012). Thus, to successfully adapt to social media technology, teachers must set teaching objectives, identify desired outcomes and choose the best suited technology to those ends; and indeed, there are several pedagogical tools that can be useful to teachers (Chant, 2010). However, as observed by Amy W. Estrada (2010), in the United Stated, efforts have been made to reconcile the rights of teachers with the schools' responsibility to protect students, namely by implementing a number of rules, such as requiring that teachers apply minimum privacy settings on their private profiles on social networking sites.

3. Methodology

This exploratory study was led according to Dubin's approach to theory building (1967), and the propositions surrounding the focus of study were constructed using the grounded theory method (Glaser and Strauss,1967) so as to achieve a more in-depth theoretical examination of this social phenomenon whereby social-professional understandings are constructed through an evolving social media.

3.1 The Methodology of Theory Building

Through a rigorous analysis, this type of qualitative research strives to discover the underpinnings of a situation by identifying the units of the theory and grouping them in relevant conceptual categories, and by exploring their interactions through the construction of feasible, explanatory hypotheses and of conceptual models that are able to not only represent but furthermore shed greater understanding on the reality being investigated. The system of logic used was the induction approach, which involved the following phases: data collection, analysis, formulation of general statements in the form of propositions on relations of causality and, finally, a deductive phase that allowed the researcher to uncover various predictive and explanatory consequences (findings) from the case under study (Chalmers, 1982).

3.2 Sampling

The sampling method required the participation of one school principal per professional association associated with the FQDE. Participants were invited by their professional associations to take part in the project.

3.3 Data Collection Phases

The data was gathered throughout a phased process (four 6-week phases, explained in greater detail below) that took placed between November 2010 and June 2011. Each participant was asked to submit a short text or brief reflection on social media and its presence in his or her educational institution, educational setting or the field of education in general. No other guidelines were given. Each participant was then expected to submit two short texts per week over 24 weeks, for a total of 960 written submissions (short texts). The research process was divided into five progressive phases. During *project start-up*, someone from the project team helped familiarize participants with the use of the digital platform during setup, as well as uploaded a working document and questionnaire. The data transfer tool needed to analyze the content of the participating directors' texts was also incorporated into this step of the project. The start-up phase served to show participants and decision makers how to post online, to a forum or on a collaborative whiteboard and at their leisure, their expectations as well as their impressions of social networks (e.g. Facebook, Twitter) in educational contexts. In the second phase, *networking*, the emphasis was placed on providing training to the online community of practice. The third phase, *consolidation*, as the name suggests, consolidated the support offered to the online community of practice. By the fourth phase, it was possible to begin *content follow-up* by posting comments on the feeds (texts) of certain participants. Support was provided through online conversations, thus enriching the community of practice. The last phase, *reporting*, did not directly involve the participants, although some participants chose to pursue these activities outside the context of this research project.

3.4 Building a Technological Platform

The platform was built using *WordPress*, a free software, and multiple *BuddyPress* plug-ins, and served as a type of logbook of professional practice. Users could navigate the various sections of the platform through tabs.

3.5 The Theoretical Framework of the Analysis

In order to properly define the principals' professional understanding within this study and ensure the relevance of codes, code families, code networks and resulting analyses, we turned to Blin's "professional activity theory" (1997). This theory, which describes professions in social terms based on specific non-reducible activities from which professionals can recognize one another and set themselves apart from others, lends itself well to the analysis of change and the complexity of professional activities.

4. Data Analysis

The Atlas.ti software was the analytical tool used to analyze the data collected from the 25 units (principals representing professional associations), which corresponded to approximately 1000 pages of data and 2290 quotations. With the concept serving as the base unit, 377 codes were used (open coding), 845 relations were established between codes and grouped into a total of 70 families and, finally, 40 network views (patterns) were generated, ultimately leading to the emergence of nine (9) dimensions of understanding for the study's results.

5. Results

This analysis yielded nine dimensions of understanding: The ethical dimension (ETD), which through the lens of the shared moral values held by humankind underscores the consequences and effects of the use of social media by students in their capacity as educational actors, particularly through their use of cell phones. The individual-actor dimension (IAD) represents all the individuals participating in an educational context and highlights the concerns—relating to anything from pedagogy to one's private life—of teachers, parents and principals. The organizational dimension (ORD) refers to the administrative and managerial aspects of management-specific know-how, knowledge and practices. It hones in on the principals who are particularly targeted by the efficiency goals of educational institutions that are in turn pressured to show organizational courage in a context of continuous change in virtual communications. The pedagogical dimension (PED) relates to student learning and teacher practices in real pedagogical situations. It demonstrates that learning rests on the teachers' willingness to steer the use of social media in their classrooms for pedagogical ends. The philosophical dimension (PHD) is defined as a global vision of the environment, events and existential problems, and is, generally speaking, little explained and not particularly methodical. This dimension highlights the social changes prompted by online communication by associating this change with the values that must be

conveyed. The <u>professional dimension</u> (PRD) explores how identity is tied to professional knowledge, activities and contexts (Blin, 1996). It underlines the fact that knowledge and professional activities are being challenged by social media and that teachers and school principals are searching for viable solutions to uphold their professional practice. The <u>psychological dimension</u> (PSD) relates to the attitude of a person who demonstrates great insight into himself or herself and others. It also clarifies how crossing the boundaries between one's professional and personal lives creates a feeling of unease among teachers. However, some teachers have already embarked on a process to adapt to this reality. The <u>relational dimension</u> (RED) corresponds to personal and collective emotional and psychological dynamics. Cell phones are the most widely used and effective media tool for creating and maintaining ties between students. This dimension confirms the importance of building close ties between players in an educational setting. The <u>technological dimension</u> (TED) speaks to all the technological tools (e.g. cell phone, computer, iPhone, iPad) and social media (e.g. Facebook, Twitter, blogs) and how these impact the role of teacher.

6. Discussion

With the emergence of these nine dimensions of understanding following the analysis, it was possible to formulate the following recommendations:

<u>Ethical dimension (ETD)</u>: It is strongly recommended that a code of ethics on the use of social media (CEUSM) be developed and used to govern the rise of social media in schools. This code of ethics should include guidelines for treating others with respect and address concerns for personal, academic and professional privacy. It should apply to the professional practices of teachers and student behaviour and practices in a school setting. The responsibility for developing such a code should fall on the school principals, and the code of ethics must recieve the full support of school boards and be subjected to consultation with and the consent of internal and external educational players. <u>Individual-actor dimension (IAD)</u>: A directory of competencies for understanding and managing social media must absolutely be developed and put in place for the benefit of teachers, parents and principals. The successful implementation of such a directory would hinge on the joint and transparent action of educational stakeholders in tandem with the development of a positive, proactive attitude. <u>Organizational dimension (ORD)</u>: An organizational approach that addresses the rise of social media in schools must be developed by school principals, the Quebec Ministry of Education, Recreation and Sports (Ministère de l'Éducation, du Loisir et du Sport, or MELS) and school boards to support teachers and create a new culture of communication among students, teachers and parents. School councils should be called on to play an active role in the development of this organizational approach, of which students should be front and centre. <u>Pedagogical dimension (PED)</u>: A new pedagogical approach tying the use of social media to student learning must be developed, implemented and supported by the principal, within the framework of a consultative process. The school's educational project must position social media as a key driver of social change, as opposed to simply technological change, in a way that incorporates the parents' point of view on the matter. <u>Philosophical dimension (PHD)</u>: The innovation, creativity and new communication issues stemming from the use of social media must be addressed in the learning process in schools by adopting a more constructive mindset that would allow students to acquire new knowledge and develop non-traditional learning networks. School principals and teachers must cease relying so heavily on notions of traditional schooling and become more open to the concerns of students and new virtual realities. It is crucial that school life be adapted to the students' realities in the social context of social media. <u>Professional dimension (PRD)</u>: The pedagogical activities of teachers and principals must be recognized and supported by school boards and MELS. School principals must thoroughly develop the professional competency of social media management, and unions and professional associations must give their members the necessary support to transition through these social media-fuelled changes across society. <u>Psychological dimension (PSD)</u>: Feelings of trust and self-assurance must be cultivated among parents and teachers, and school principals must facilitate the creation of an inter-school network resource for teachers. The priority must be placed on helping teachers to adapt to this social change in order to eliminate existing psychological tensions. <u>Relational dimension (RED)</u>: Students, the drivers behind the growing use of social media, must be taken into consideration throughout this process of social change, and relations between parents, school principals and teachers must be strengthened. Teachers must be considered as the linchpin of success for adapting the learning process, and schools must help parents adopt a constructive attitude towards these changes and guide their understanding of social media use. <u>Technological dimension (TED)</u>: All players in the education arena must receive training from MELS, the school boards and school principals to achieve a stronger understanding of social media and learn how to use it

properly. A social media committee with a student voice would be the best way to integrate social media into each educational institution.

7. Conclusion

When this study was launched in the fall of 2010, we had already hypothesized that the use of social media was a significant problem for schools, but we were unaware of the many dimensions, issues and challenges this represented for educational stakeholders. Note that the study of the school principals' understanding of the entry and rise of social media in schools was not meant to centre around the use of technological tools or platforms; rather, this study sought to bring to light different avenues that could lead to a better understanding of the place and role of social media as a means for communication within Quebec educational institutions. As a result of this study, we were able to incorporate this use of social media into a framework of neoliberal social change in which students define their own educational interventions and pathways; in other words, in this new context, students may choose to learn remotely rather than in person, through an infinite number of interpersonal relations rather than in dyads. This shift from traditional modes of communication to interactive and virtual modes of communication have propelled students into the role of broker and producer of new ties, relations and knowledge. Students are at the helm of social media, and even though they may navigate while unaware of the boundaries that do in fact exist, they command a far better grasp of its use than teachers and principals and have defined a language and interactive voice that can never be deactivated by educational institutions.

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Twitter based Analysis of Public, Fine-Grained Emotional Reactions to Significant Events

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Abstract: Due to the real-time nature and the value of social media content for monitoring entities and events of significance, automated sentiment analysis and semantic enrichment techniques for social media streams have received considerable attention in the literature. These techniques are central to monitoring social-media content, which is now becoming a significant business with commercial, institutional, governmental and law enforcement interest into its applications. Prior work in sentiment analysis has particularly focused on negative-positive sentiment classification tasks. Although numerous approaches employ highly elaborate and effective techniques with some success, the sentiment or emotion granularity is generally limiting and arguably not always most appropriate for real-world problems. In this paper a newly developed ontology based system is employed, to semantically enrich Tweets with fine-grained emotional states in order to analyse the subjective public reactions to a wide selection of recent events. The approach detects a range of eight high-level emotions and their perceived strength (also known as activation level), specifically; anger, confusion, disgust, fear, happiness, sadness, shame and surprise. A set of emotional profiles for different events is obtained and an in-depth analysis of the emotional responses is presented. Recent events, such as the 2013 horsemeat scandal, Nelson Mandela's death, September 11th remembrance anniversary, and recent tube strikes in London, are analysed and discussed. The feasibility and potential benefits of automated fine-grained emotional event response analysis from social-media is illustrated and linked to future work.

Keywords: Social Media, Twitter, Sentiment Analysis, Basic Emotions, Natural Language Processing, Ontology

1. Introduction

Automated sentiment analysis and semantic enrichment (e.g. geo-location inference, named entity recognition, topic classification, etc.) of social media text streams, such as Tweets and Facebook status updates, is receiving considerable attention in the literature. This is largely motivated by the insights and value that such datasets were shown to provide (Chew and Eysenbach, 2010; O'Connor et al., 2010; Tumasjan et al., 2010; Lansdall-Welfare et al., 2012; Abel et al., 2012). It has also been evidenced that during times of natural crises and terrorist incidents Twitter is often the first medium through which the news breaks and through which individuals express their initial impressions and emotions relating to the events (Beaumont, 2008; Cashmore, 2009; Sakaki et al., 2010; Cheong and Lee, 2011; Glass and Colbaugh, 2012). Social-media streams in general allow for observing large numbers of spontaneous, real-time interactions and varied expression of opinion, which are often fleeting and private (Miller, 2011). Miller (2011) furthermore points out that some social scientists now see an unprecedented opportunity to study human communication, which has been an obstacle up until recently. O'Connor et al. (2010) demonstrated how large-scale trends can be captured from Twitter messages based on simple sentiment word frequency measures. The researchers evaluated and correlated their Twitter samples against several consumer confidence and political opinion surveys in order to validate the approach, and have pointed out the potential of social-media as a rudimentary yet powerful polling and survey methodology. Motivated by such work this paper will specifically focus on automated fine-grained emotion analysis (also known as advanced sentiment analysis) over a number of recent events, ranging from the European horsemeat scandal to the recent tube strikes in London. As far as the authors are aware this study is novel in the range of heterogeneous events analysed and the range of emotions detected. Most literature in the sentiment analysis field has looked at polarity sentiment (i.e. negative – positive sentiment) classification only, with a few exceptions (Bollen et al., 2011; Lansdall-Welfare et al., 2012; Choudhury and Counts, 2012). In this paper a recent technique called EMOTIVE developed by Sykora et al. (2013) is employed. EMOTIVE identifies eight basic fine-grained emotions from sparse text, namely; anger, disgust, fear, happiness, sadness, surprise (also known as Ekman's basic emotions – Ekman and Richard, 1994), plus confusion and shame. Through this, novel insights towards a fine-grained emotional composition of reactions to events discussed over Twitter are provided in this paper.

The remainder of the paper is organised as follows. Section 2 introduces some background and prior work in the sentiment analysis field and gives brief method details. Event characteristics based on Twitter features and detected emotions are presented in section 3. Section 4 analyses and discusses the events further. The paper is concluded in section 5.

2. Background and Methodology

A recent, in-depth overview of prior academic work in the sentiment analysis field is provided in Thelwall et al. (2012). The approach used in this paper (Sykora et al., 2013) broadly falls under the lexicon / linguistic analysis approach, from the three approaches presented in Thelwall et al. (2012) – except that we draw on emotion terms from within an ontology with a richer semantic representation than commonly used emotion term-lexicons. Although numerous approaches employ highly elaborate and effective techniques with some success, the sentiment or emotion granularity is generally limiting. Specifically, there are three main problems with existing approaches. (1) Notions of affect and sentiment have been rather simplified in current state-of-the-art, often confined to their assumed overall polarity (i.e. positive / negative), Thelwall et al. (2012). (2) Another problem with polarity-centric sentiment classifiers is that they generally encompass a vague notion of polarity that bundles together emotion, states and opinion (Bollen et al., 2011). (3) There is no common agreement about which features are the most relevant in the definition of an emotion and which are the relevant emotions and their names (Grassi, 2009). In the emotion analysis employed in this paper, sentiment is fine-grained based on the widely accepted Ekman's emotions (Ekman and Richard, 1994) from social psychology, while other work on emotions was also considered (Plutchik 1980; Drummond, 2004; Izard, 2009) and is further discussed in Sykora et al. (2013). Only explicit expressions of emotions are extracted and ambiguous emotional expressions, such as certain moods and states that are not expressing emotions are ignored on purpose, as opposed to Bollen et al., (2011), Lansdall-Welfare et al. (2012), and Choudhury and Counts (2012). The EMOTIVE ontology employed in this paper was designed to detect a wider range of well recognised human emotions, for instance 'surprise', 'disgust', or 'confusion', but at the same time differentiate emotions by strength (e.g. 'uneasy', 'fearful', 'petrified'). In addition to the basic emotions, the ontology also covers and handles negations, intensifiers, conjunctions, interjections. It contains information on the perceived strength (also known as activation level) of individual emotions and whether individual terms and phrases are slang or used in standard English. Finally emotions and their associated POS (Parts-of-Speech) tags are also taken into consideration when these would aid to resolve ambiguity. In Sykora et al. (2013) our technique was evaluated and compared to Choudhury and Counts (2012) and Thelwall et al. (2012) – SentiStrength 2 – in terms of emotion detection and emotion strength scoring, respectively. Good results, comparable with state-of-the-art were achieved and a high f-measure for emotion extraction on an initial test dataset was reported (see sub-section 2.2).

2.1 Data Collection

The datasets analysed within this paper were continuously retrieved from Twitter, using the standard REST Twitter Search API to access the datasets (see https://dev.twitter.com/docs/using-search). The retrieval occurred during the related time-period of an event and a search-term or hashtag, known to be extensively used by the Twitter community for that event was chosen by a microblogging expert. For most events of interest data collection would occur during the days / time-period of the event, or the days immediately following the event in order to collect the related reactions, chatter and emotions. Often the selected term or hashtag used for the data collection would also be trending, i.e. according to Twitter trends. The maximum possible number of tweets, given the API limitations and compatible with Twitter's terms of service, was automatically retrieved using custom developed scripts. In total 1,570,303 tweets were collected and analysed (see sections 3 and 4).

2.2 Fine-Grained Emotion Extraction

Due to enforced brevity of messages (e.g. 140 characters or fewer on Twitter), textual content commonly encountered on social media is often not grammatically bound nor constructed properly and contains extensive use of slang, short-hand syntax, incorrect spelling, repeated letters, repeated words, inconsistent punctuation, odd Unicode glyphs, emoticons and overall a high proportion of OOV (Out-Of-Vocabulary) terms. Hence it has been suggested that a retrained NLP pipeline for sparse, informal text is necessary to effectively process such language (Ritter et al. 2011). The approach used to extract the fine-grained emotions from tweets is described in detail within Sykora et al. (2013). Essentially the approach has two parts and is based on (1) a

custom Natural Language Processing (NLP) pipeline, which efficiently parses tweets and classifies parts-of-speech tags, and (2) an ontology, in which emotions, related phrases and terms (including a wide set of intensifiers, conjunctions, negators, interjections) and linguistic analysis rules are represented and matched against. Hence rules inferred from the semantics within the ontology are applied to each tweet to evaluate a tweet's emotional content, and certain elements, such as negators or intensifiers (increase or decrease an emotion) are only picked up if they are likely related to emotions; sentence boundaries or alternatively token proximity help to define whether an element is related. The ontology contains activation levels or emotion strength scores associated with various expressions. For instance, the example tweet "I am totally scared:-(!!! this is v upsetting. Am I riotphobic?" contains emotions of fear and sadness with scores of 9 and 4 respectively, given the scores for totally [+1] scared [+4], phobic [+4] and v [+1], upsetting [+3]. The activation levels were devised and based on prior work, see Sykora et al. (2013) fore details. An initial evaluation of the system achieves excellent results, with an f-measure of .962, precision of .927 and recall of 1. The recall is likely to be lower on larger test datasets containing higher proportion of OOV slang, yet the high recall on the test dataset is strongly indicative of good coverage of expressions. A comparison with Choudhury and Counts (2012) and Thelwall et al. (2012) performed in Sykora et al. (2013) showed that the emotion detection performs better, and in the latter case in line with state-of-the-art approaches.

3. Emotions and Event Characteristics

This section presents the analysis of emotional expression for 28 separate datasets relating to 25 distinct events over a total collection of 1,570,303 tweets. Table 1 summarises the datasets and presents details on how many tweets were collected for each specific hashtag / search terms (i.e. 'Dataset' column in table), what percentage of those contained emotions, over what time-period the data retrieval took place and basic background information on the related event (please visit http://emotive.lboro.ac.uk/resources/ECSM2014 for a full list of links to specific event related articles). As can be observed from table 1, the five most emotional datasets relate to #jacinthasaldanha (37.91%), #ChineseNewYear (36.13%), #royalprank (23.17%), 'Daniel Pelka' (21.54%) and #2DayFM (20.43%). The hashtags #jacinthasaldanha, #royalprank and #2DayFM all refer to the same event, in which a nurse (Jacintha Saldanha) committed suicide after being the victim of a public (2Day FM radio station) prank (#royalprank). The emotional outpouring on Twitter over her needless and tragic death was enormous. The torture and death of the four-year-old boy, Daniel Pelka, was also met with outrage and significant outpouring of highly emotionally charged tweets. #ChineseNewYear (31st Jan 2014) was naturally filled with mostly positive emotions and New Year wishes. However, quite often tweets carry relatively low emotional content, which seems to be due to the nature of the event / topic discussed in tweets. On average 12% of tweets contain explicit emotions (standard deviation being 9%).

Table 1: Overview of the collected and analysed datasets and their relationship to events

Dataset	Total (N)	Emotional Tweets (%)	Event	Event Type	Time Period
helicopter crash	25,387	13.99%	Helicopter crashes into crane in central London (16th Jan)	accident	16 Jan-17th Jan 2013
#september11	88,739	9.62%	September 11th 2013 anniversary	anniversary	11th Sep-12th Sep 2013
#twintowers	28,168	16.32%	September 11th 2013 anniversary	anniversary	11th Sep-12th Sep 2013
#ChineseNewYear	22,466	36.13%	Chinese New Year, 31st Jan 2014	cultural event	31st Jan-1st Feb 2014
#bankholiday	7,862	11.71%	Bankholiday - public holiday in the UK	daily life	24th May 2013
#sleep	36,139	3.65%	An eight day long period	daily life	23rd Oct-31st Oct 2013
#tired	79,253	4.49%	An eight day long period	daily life	23rd Oct-31st Oct 2013
#JamesGandolfini	11,975	18.92%	Death of actor James Gandolfini	death	20th Jun-23rd Jun 2013
Ariel Sharon	90,603	8.18%	Death of the ex-prime minister of Israel	death	11th Jan-15th Jan 2014
Nelson Mandela	108,794	12.51%	Death of Nelson Mandela	death	5th Dec-9th Dec 2013
'Daniel Pelka'	11,708	21.54%	Sentencing of the killers in the brutal murder of school boy Daniel Pelka	death / murder	1st Aug-5th Aug 2013
#RoyalMail	4,309	6.75%	Privatisation of the British Royal Mail, 12th Sep announcement	economic / controversial	12th Sep 2013

#tubestrike	41,176	8.47%	London February tube strike by RMT and TSSA unions	economic / controversial	5th Feb-7th Feb 2014
#LFW	43,509	4.27%	London Fashion Week	fashion event	17th Feb-18th Feb 2014
Anjem Choudary	1,047	5.44%	Controversial comments from a radical cleric on BBC	hate speech incident	24th May 2013
#2DayFM	10,898	20.43%	Royal prank by Australian 2DayFM - suicide of Nurse Jacintha Saldanha	incident / death	7th Dec-14th Dec 2012
#jacinthasaldanha	1,216	37.91%	Royal prank by Australian 2DayFM - suicide of Nurse Jacintha Saldanha	incident / death	7th Dec-14th Dec 2012
#royalprank	10,459	23.17%	Royal prank by Australian 2DayFM - suicide of Nurse Jacintha Saldanha	incident / death	7th Dec-14th Dec 2012
g8 summit	32,676	4.24%	39th G8 Summit in UK on 17th-18th June	political / controversial	16th Jun-20th Jun 2013
#iPhone5C	8,824	3.90%	Announcement of new iPhone on 10th Sep	product release	11th Sep-12th Sep 2013
#iPhone5S	14,638	5.70%	Announcement of new iPhone on 10th Sep	product release	11th Sep-12th Sep 2013
gta5	130,748	4.22%	Release of computer game GTA 5 on 17th Sep	product release	17th Sep-18th Sep 2013
#NSA	381,402	5.08%	National Security Agency PRISM surveillance program (initially leaked early Jun)	scandal	13th Jun-15th Jul 2013
#prism	106,432	4.96%	National Security Agency PRISM surveillance program (initially leaked early Jun)	scandal	13th Jun-15th Jul 2013
Horsemeat	56,970	7.47%	Horsemeat missold as beef (issue came to light on 15th Jan)	scandal	16th Jan-18th Jan 2013
#ClosingCeremony	87,943	11.55%	London 2012 Olympics - Closing ceremony	sport event	12th Aug-17th Aug 2012
#paralympics	27,993	13.97%	London 2012 Olympics - Paralympic games (29th Aug - 9th Sep)	sport event	4th Sep-6th Sep 2012
#woolwich	98,969	12.63%	Attack and murder of Drummer Lee Rigby in Woolwich, by extremists	terror incident / murder	23rd May-24thMay 2013

Despite some datasets containing relatively low proportion of emotional tweets, no dataset has less than 291 emotional tweets (avg. being 4,670), with the exception of Anjem Choudary. Only 57 tweets with explicit emotions were available for Anjem Choudary (i.e. 5% out of 1,047 tweets). Figure 1 illustrates how a useful emotional 'footprint' can nevertheless be generated, despite the low count of emotional tweets. Specifically, figure 1 presents the distribution of the proportion of emotions among eight basic, fine-grained emotions for #woolwich (incident in which a UK soldier was murdered in broad daylight in London) and Anjem Choudary (a controversial religious figure who was given air-time on BBC after the event, and was accused of hate speech and declined to condemn the attack on the soldier). The distribution of emotions is intuitive and can be interpreted in a straight forward manner in relation to #woolwich.
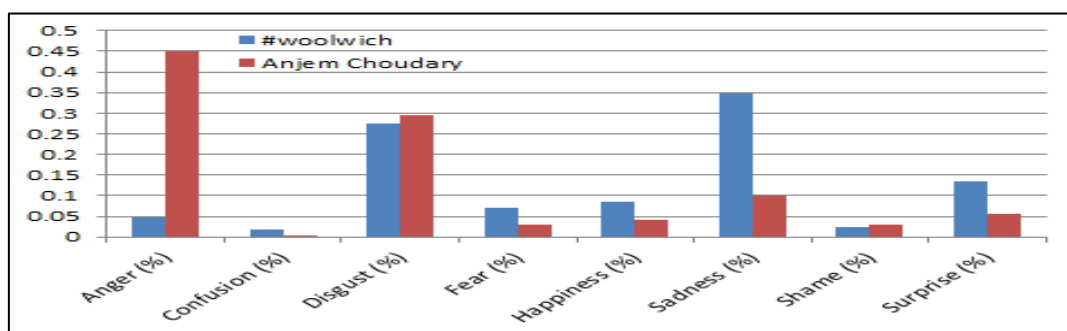
Figure 1: Basic emotions detected for #woolwich (blue) and Anjem Choudary (red)

The emotions most frequently associated with Anjem Choudary were extreme anger and disgust. Intuitively, the proportion of anger is much higher for Choudary than for #woolwich, whereas both contain similar levels of disgust, but sadness dominated #woolwich. Several exemplary tweets illustrate the outpouring (basic emotions are highlighted in the square brackets):

- I'm quite angry that Anjem Choudary is on Newsnight tonight - I can only imagine how furious Muslims he falsely claims to speak for must be [anger]

- And I'm angry that Anjem Choudary is aloud to preach hate in our towns and city's It's the government we should be angry with not a religion [anger]

- Anjem Choudary, gfy. Ruining the 'Choudhary' name for all of us, you complete bastard, it's sickening #woolwich [disgust]

- *@EDLTrobinson* so sad, and so wrong that ANJEM CHOUDARY can get air time saying muslims around the world will call them heroes what a twat. [sadness]

3.1 Overview of Event Detected Emotions

This subsection focuses on further specific example events and their emotional profiles in order to illustrate the use and highlight several nuances of our Twitter emotion detection system.

The 2013 September 11th terror attack anniversary related tweets (represented by #september11 and #twintowers) mostly contain sadness and a similar emotional distribution overall. Nevertheless, although subtle yet noticeable, it is interesting that happiness is much lower for the #twintowers than #september11 tweets. A detailed inspection of the tweets showed that #september11 was used more widely and somewhat surprisingly by people with radical and offensive opinions, who actually expressed happiness about the terror attacks of 2001, see bullet list below for some example tweets.

- Glad to say I'm from Canada #september11 [happiness]

- Yes We Are Terrorist And We Are Proud!When It Comes To Scaring Pigs #september11 *(attributed to the account @albatar_moahed, other such as @laskegah have retweeted it)* [happiness]

- We will never forget that HAPPY day #september11 really we love u "Osama" #Remember_11_September enjoy your eyes http://t.co/c8bSkSZ0Y4 [happiness]

- I will never forget where I was on #september11 Keep your thoughts w/ the families who lost their loved ones. I am Proud to be an American! [happiness]

- Remembering 9/11& feeling blessed for the safety of my friends & family and the freedoms we all still enjoy. God bless us all. #september11 [happiness]

- I still remember like it was yesterday, watching the #twintowers tumble down on TV, hands tied, in complete state of shock and anguish. [surprise]

- This day 12 years ago, I was sitting on my coffee table in shock, 16 miles away from Ground Zero. #remember #nyc #newyork #911 #twintowers [surprise]

- I'm flying today....is that my bad luck kicking it....9-11 brings back more fear when you're flyin on it #twintowers #Remember_11_September [fear]

- I was scared shitless for my mother, the then ignorant me didn't know that Atlanta was miles away from #twintowers #sept911th [fear]

- The fact that Miley Cyrus is trending over #september11 and #twintowers is actually disgusting. [disgust]
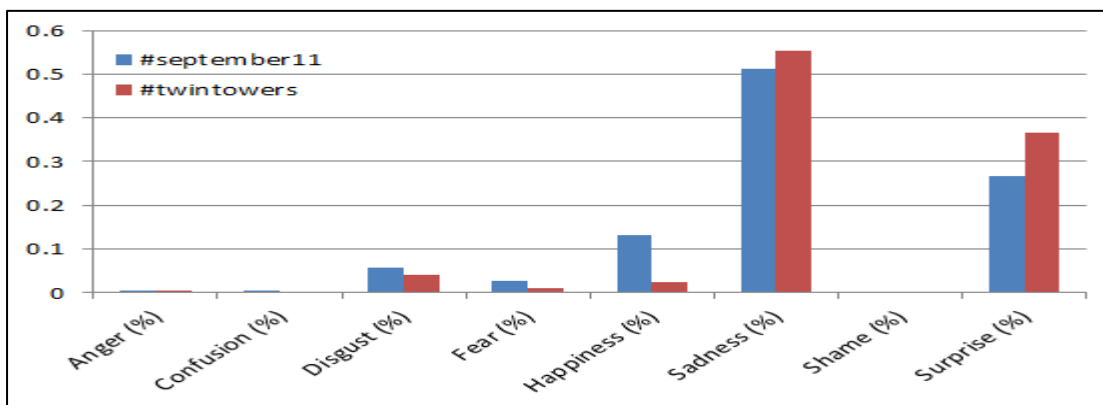

Figure 2: Basic emotions detected for #september11 and #twintowers

As evidenced by our dataset, it seems that generally speaking deaths of (well known) people tend to be accompanied with relatively high level of emotional outpour. Figure 3 highlights that sadness, as expected, tends to be a well represented emotion in such events, as well as higher levels of surprise.
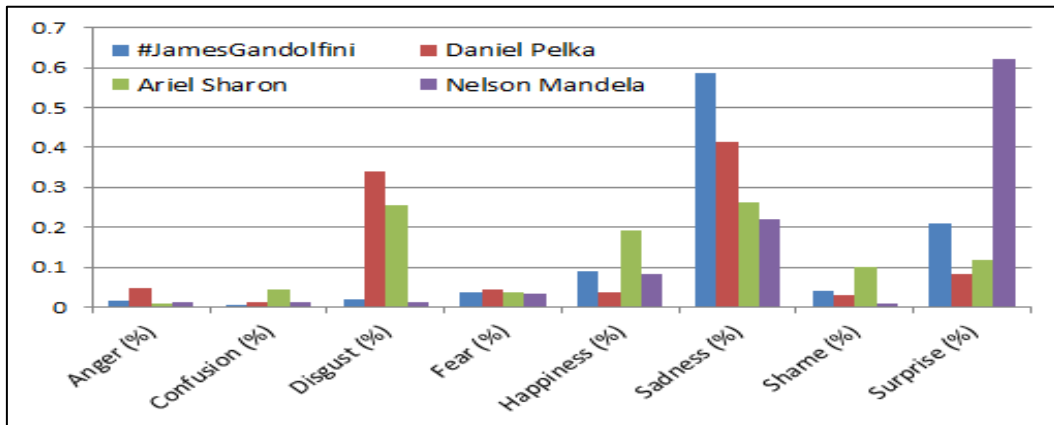
Figure 3: Emotions detected for #JamesGandolfini, Daniel Pelka, Ariel Sharon and Nelson Mandela

The figure further illustrates that in the case of the controversial former prime minister of Israel, Ariel Sharon, people expressed disgust, shame and even happiness, which is significantly higher, although a proportion of it is in his remembrance by his supporters. The actor James Gandolfini died unexpectedly from a heart attack aged 51, hence the associated higher level of surprise. Interestingly very high proportion of tweets containing surprise were detected for Nelson Mandela, which were mostly expressions of disbelief that such a legendary leader has passed away, although he has been in frail health for a prolonged period of time.

Finally, tweets employing the hashtags and relating to the individual #JacinthaSaldanha, #2DayFM, the radio station responsible for the so-called #royalprank, which resulted in the nurses' suicide, highlight an interesting aspect about our emotion detection system.
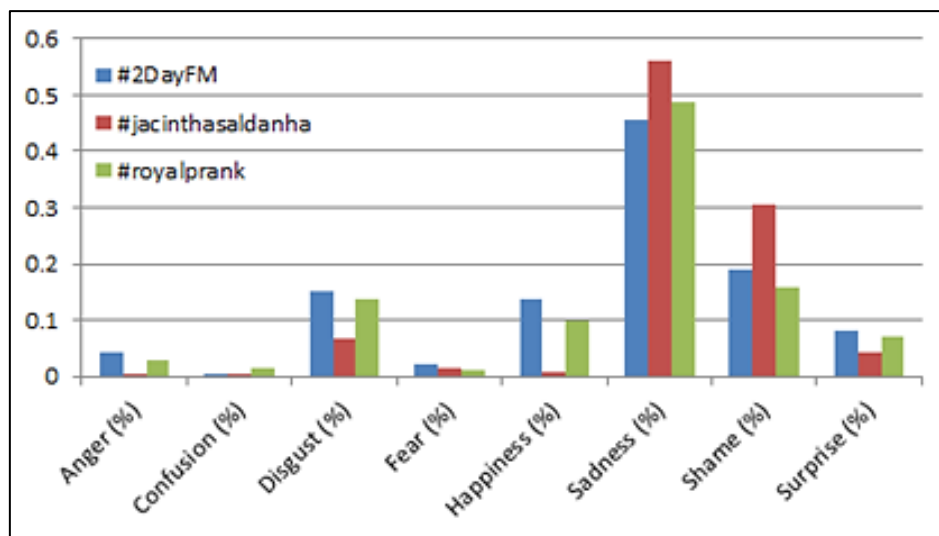
Figure 4: Emotions detected for #2DayFM, #jacinthasaldanha and #royalprank

From figure 4 it is apparent that sadness, followed by shame, dominated the emotional reaction in the immediate days following the event. Also the higher levels of sadness and shame for #JacinthaSaldanha relative to the two other hashtags point out that these reactions were marginally more prevalent in relation to the nurse. Expressions of disgust, happiness, surprise and anger on the other hand were more prevalent for #2DayFM and #royalprank relative to #JacinthaSaldanha, which indicates that these emotions were targeted not at the victim but the radio station and tweets relating to the prank. This relative difference is especially noticeable for 'happiness', where a manual inspection of individual tweets reveals a proportion of sarcasm and irony, but at the same time people did not react with 'happiness' (including sarcasm) to the victim of the prank.

3.2 Correlations

An initial evaluation of correlations between emotions and basic twitter usage features (e.g. tweet @replies and tweet @mentions) was performed. Kendall's Tau β, which is generally more conservative than Spearman's rank correlation was employed on ratio summaries of the 28 topical datasets. All the significant correlations at p (two-tailed) < .001, were between; happiness–sadness (-.614), anger–confusion (.444), anger–disgust (.370), disgust–happiness (-.360), anger–mentions in tweets (-.524), anger–replies (-.386), fear–mentions in tweets (-.402) and fear–replies (-.349). The strongest association exists between happiness and sadness for the different datasets, as well as increased levels of anger which tends to coincide with increased levels of confusion and disgust. Tweet mentions (i.e. not replies, but rather mentions of other @user_accounts in a tweet) and tweet replies are also both negatively correlated with increased levels of anger and fear. Although with much lower significance levels, some other interesting correlations were found, such as a negative correlation between proportion of geo-located tweets and increased fear. These correlations are; however, unreliable due to the small dataset (28 measurements) and hence in future work we intend to extensively increase the size of analysed events and employ a thorough regression analysis.

4. Further Analysis and Discussion

In order to measure similarities purely based on emotional scores for the eight basic emotions between the events, hierarchical clustering was employed. The clustering method used was agglomerative between groups linkage clustering with squared Euclidean distance (values were normalised to z-scores) to generate the Dendogram in figure 5.

Reading the Dendogram horizontally from left to right, some spontaneous clusters of related events become apparent. It can be observed that #ChineseNewYear and #bankholiday are grouped in the same cluster, which is also quite distinct from other clusters. This is due to the emotional profile for both events predominantly containing happiness (96% and 85% respectively), with little to no other emotions being detected. Other events contain more widely distributed emotional profiles which are still closely related; #royalprank, #2DayFM and #jacinthasaldanha all cluster together, for instance. #ClosingCeremony and #LFW are both events which had a similar distribution of emotions as generally positive emotions with some level of surprise. iPhone5S, which was received better than the iPhone5C model and Paralympics, cluster together. Some unexpected and sad events, such as #JamesGandolfini, #september11, #twintowers and helicopter crash all cluster together as well. Not surprisingly more controversial and sad events, i.e. tweets relating to Daniel Pelka, Woolwich attack, Horsemeat scandal and the G8 summit all fall into a cluster, which is also related to a similarly sized cluster with events 15, 26, 28, 23 and 18 (consult figure 5). Some events could not be placed into very meaningful clusters, such as Ariel Sharon and iPhone5C which have some similarity, as the iPhone5C was disappointing and attracted more specific negative emotions, similar to the profile of emotions for Ariel Sharon, yet still related to the clusters containing the other deaths (1, 11, 6 and 4). Anjem Choudary had a sufficiently different emotional profile and did not compare closely with the other clusters.

4.1 Limitations and Future Work

There are several limitations to the work presented in this paper. Spam on social-media streams is a major issue (Yardi et al. 2010), as it is not uncommon for hashtags to be misused, often by rogue accounts, to piggyback on a popular twitter topic and feed spam into the social-media stream. In this paper's analysis tweets were indirectly filtered to include only the ones that contained explicit expressions of emotion, as detected by EMOTIVE. This seems to be relatively effective in filtering out obvious spam and hijacked hashtag tweets, since these often don't contain subjective content, such as emotions. However, effective recognition of dubious accounts and their profiling may improve future analysis. Linked to this is the issue of profiling individual Twitter accounts to better understand demographic variables of the analysed sample, such as detecting the likely age, gender, or income level of specific user accounts. Currently available techniques unfortunately leave much to be desired, in terms of inference accuracy; however, there is ongoing research in this area (Bates et al. 2012). In this paper we did not distinguish between RTs (re-tweets) and original tweets, as there is some evidence that RTs are useful because they amplify and validate a message or opinion (Starbird and Palen 2012). Hence there is an argument to be made for their inclusion in the analysis. To address the issue of a relatively small sample size (see sub-section 3.2) we intend to generate fine-grained emotional

footprints for much larger event samples in the future. We also see significant potential in investigating how emotions in long-lived events evolve over time, and how they differ between events.
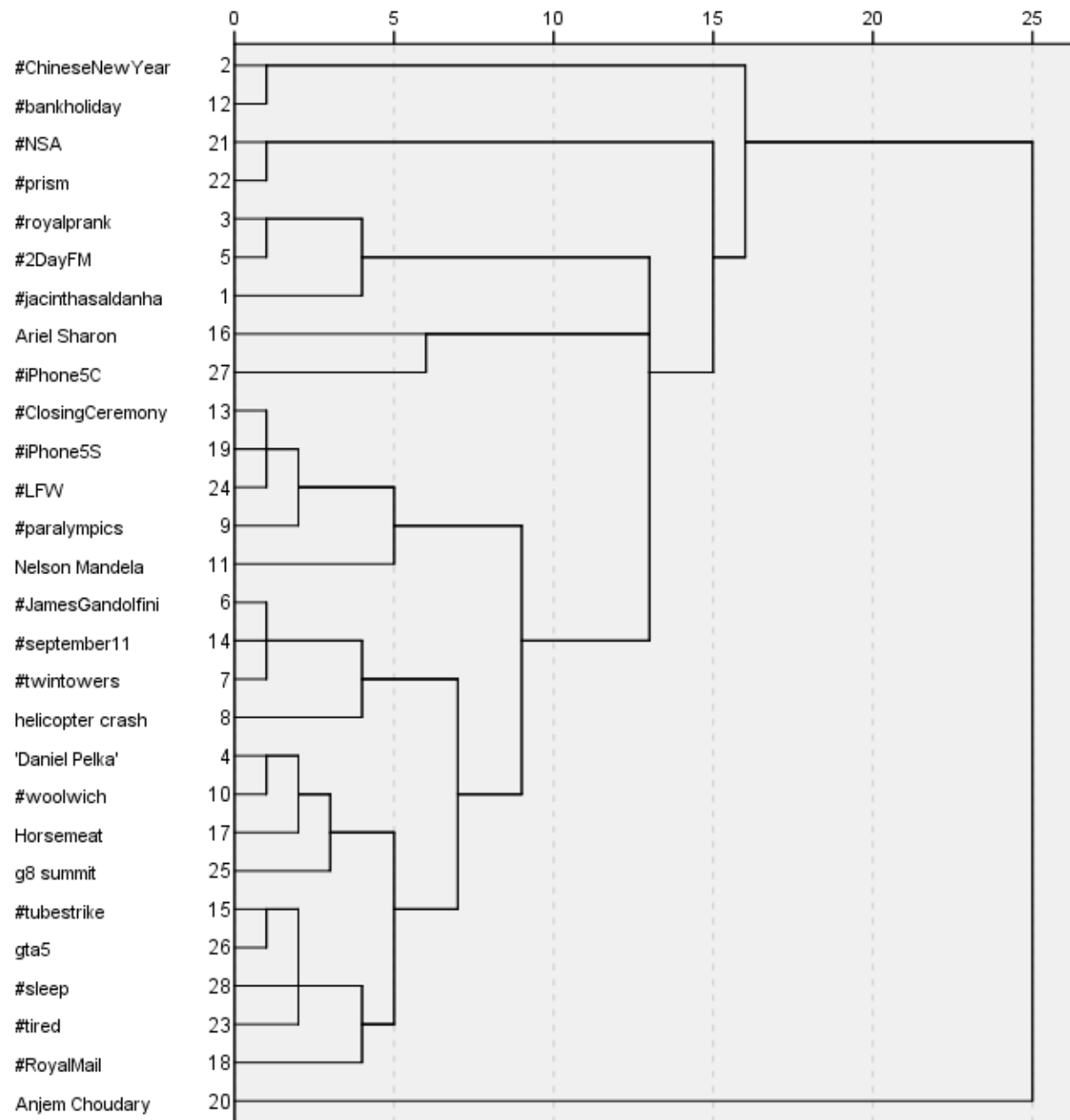
Figure 5: Dendogram – Agglomerative between groups linkage clustering (based on emotion scores)

5. Conclusion

This paper presents some novel results of emotionally annotated Twitter events with respect to the range of heterogeneous events analysed and the range of fine-grained emotions detected. Analysis of emotions was performed on over 1.5 million tweets, relating to 25 distinct events. The approach employed is a newly developed advanced-sentiment analysis technique, which automatically detects fine-grained, basic emotions (as identified in psychology literature) with an already established accuracy. Several examples of emotional profiles were given and the emotionality within tweets for different datasets discussed. Hierarchical clustering was employed to help organise the events based on emotions in tweets and it was found that events that generate similar emotional reactions on Twitter tend to also be similar in type. They can hence be organised solely based on specific fine-grained emotional information. Future work includes a larger study and analysis of emotions over time.

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The Social Media Canvas and Its Use in Strategy Formulation

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Abstract: Purpose. The popularity of social media platforms presents a challenging opportunity for contemporary businesses; millions of people use these online services daily. This paper is a qualitative literature survey on the successful use of social media in business. It presents the Social Media Canvas as a tool that determines how social media can be made integral to business strategy and thus aid businesses in achieving their objectives. Design/methodological approach. The approach is theoretical, based on an examination of recent journal articles on the use of social media across various business sectors, from consumer-led implementations to broad corporate-wide strategy-led implementations. Findings. Arising out of the survey is seen the need to clarify how social media may be used in business. This leads to a tool, the Social Media Canvas, which links strategy to the use of social media and provides for its successful implementation and evaluation. The use of this tool will encourage effective change within the organisation. Practical applications. The opportunities presented by social media require the business to become a social enterprise. Central to this are customer needs and wants and the processes underlying consumer decisions. The Canvas links the business strategy directly to the customer's decision-making process, and shows how social media can attract new customers and maintain relationships with them.

1. Introduction

The use of social media is now pervasive and companies are devoting increased resources to developing and tracking their involvement in social media. Although social media has value as communication tools for building and maintaining relationships with a wide range of stakeholders, companies must consider social media as part of a larger, well-defined business strategy.

Managers increasingly understand the need to use social media, however, they are often not sure how these fit into their organisation, and seek a clear process on how the tools can drive this strategy. Meredith suggests that "we can help managers leverage social media's potential for reaching internal and external constituents, such as employees, the media, government, shareholders, as well as customers" (Meredith 2012).

This paper develops a model that provides the clarity and direction needed for the successful implementation and evaluation of social media, one that is driven by business strategy. It will examine how managers are using social media for shaping an organisation's success through case study material, and provide a guide for organisations searching for a social media implementation process.

These organisations can adopt the suggested model, and by using a step-by-step implementation, enable the benefits from a partial implementation, and yet still progress towards a full implementation.

2. What is Social Media

Social media is a collection of online applications typifying the current interactive stage of the Internet. (Lorenzo-Romero 2013) These applications are now a familiar phenomenon to consumers and businesses alike. Highly popular social media applications like Facebook, Twitter, YouTube and Linkedin attract hundreds of millions of users worldwide who spend time on these networks daily.

Research published by Pew found that Facebook dominates social networking, with 71 per cent of online adults using the site (Maeve Duggan 2013). However, it also found that people are more likely to combine sites than rely on only one. Of the nearly 1,500 adults surveyed, 42 per cent said they used two or more social sites, compared with 36 per cent who said they frequented only one, usually Facebook. Maeve Duggan, a co-author of the report, said users were diversifying not only which sites they used but also how many and how often:

> "While no other social media platform compares with Facebook in overall number of users, other services are catching up in other ways. For instance, Instagram has very engaged users that are on the app multiple times a day," she said. "Other sites like Pinterest and LinkedIn appeal heavily

to certain demographic groups. Each site has its own blend of users and tools that appeal to their audiences."

Facebook retains the highest level of engagement among users – measured by how often they log on – with 63 per cent visiting the site once a day, and 40 per cent several times each day. It is closely followed by Instagram, which it acquired last year, where 57 per cent of users visit at least once a day.

Another example of the successful use of social media, in this case using Twitter, comes from Jean-Claude Biver - Chairman of Hublot:

'Social media and especially Twitter are the future. In a busy environment, there is a need to be concise and straight to the point and Twitter with its 140 characters is all about that. This is why Twitter is so powerful.' (Bochenek, Blili 2013)

For many consumers social media has become a standard part of their social life providing networking opportunities and peer interaction of a social and commercial nature, and for companies it provides for a collaborative tool for various interactions between customers and the company, as well as internally between employees.

3. How Organisations can Strategically Benefit from Social Media

3.1 Organisations Depend on Networks

This is especially true in our modern economies where communication and the flow of information are increasingly important to an organisation. Social media technologies allow firms to evolve networks of online communities where conversations can take place with customers, or between employees.

The power of such formal and/or informal interaction enables networks to become communities in which relationships develop and become embedded in network architecture, both virtual and physical.

These networks can engender interaction with customers, foster product and procedure improvements, and inspire innovations. These communities are found to tap into the wisdom of the crowd. Further, by engaging affiliated partners and open dialogue, customer retention and satisfaction are improved, thereby increasing revenue. (Sena, Sena 2008)

Social media networks can provide a forum for organisations to facilitate knowledge sharing and collaboration, solicit feedback from partners, and extend its reach in existing and to new markets.

3.2 Networks Provide a Focus on Users and Community

Generally, people who use social media share something in common, either an interest in something or a friendship. They use social media to facilitate their interaction, and the principles driving the design of social media are based on a focus on users and on the connections between people and their sharing of content. It fosters online communities, and these communities consist of networks that connect actors in a pattern of relationships that ties them together.

Companies are interested in networks that facilitate economic activities between partners.

Thus social media naturally suits this process of enabling transactions. It satisfies the need to share with both employees and customers, facilitates collecting relevant information in work and social contexts, renders interaction patterns within organisations visible, and it assists sharing for geographically distributed organisations. Further, and most importantly for an organisation, social media nurtures co-operation and trust within the community.

3.3 They Are a Strong Marketing Tool

Social media enables the brand to personally engage with people on consumer terms, at the time they want, where they are, when they are travelling and through channels that they choose.
Procter & Gamble Chairman Bob McDonald says:

'Any medium that helps us create a one on one relationship with any consumer is what we want to do. An endpoint of marketing is a one-to-one relationship with any consumer. Digital allows that relationship. I want a one on one relationship with 7,000,000,000 people - where we can customise the offering.' (Woodcock, Green et al. 2011)

Social media thus provides the opportunity to marketers to become personal, to interact with thousands of customers spread across geography on a one-to-one basis.

Marketers will have the ability to understand the mood, find new sales leads, respond faster to consumer needs and respond by listening to the conversation taking place.

4. The Social Media Canvas

Technologies succeed when they satisfy a need by providing a more effective way of carrying out a desirable activity. In the case of social media, the basic activity is connection. Once people are connected, they begin conversations. Although email is still the basic form of communication online, social networking provides a much more sophisticated level. With these conversations comes content creation and sharing, in other words collaboration. This is the basic reason for the use of social media: connectivity, conversations and collaboration. For an organisation, however, these tools add the most value when they become central to it and complement or ideally substitute for existing processes. They should not be distracting extras. (Chui, Dewhurst et al. 2013)

The Social Media Canvas is a tool that can be used to embed these technologies within the business. It is a four stage process that links company strategy to the actual use of social media. The four steps are:

1. Set Out the Company Strategy

2. Present Value, Not Complexity

3. Insist on Metrics

4. Have Actionable First Steps

4.1 Set Out the Company Strategy

When an organisation considers using social media it often starts with questions such as how to gather more followers, should it move directly to mobile, how can an organisation measure the number of likes, hits or retweets, and so on. They often lose sight of the reasons they wanted to use social media in the first place. These are questions about tactics, not strategy. The starting point of this conversation should be the company's strategy: how can social media strengthen or enhance the organisation's competitive advantage?

The driver of social media management must thus be the strategic objectives of the company. It defines how the company is present on social media. It is necessary to understand the strategic imperatives of the business and demonstrate how the social media program supports.

4.2 Present Value, Not Complexity

Social media may appear to be free, but for an organisation, it can be costly in terms of time, effort, and may result in mistakes that lose the company money and direction. (Arora, Predmore 2013) To avoid this the company should:

- have an in-depth understanding of the ways in which the firm's products and services create value for consumers
- present this value in ways that make it possible for customers to engage in a conversation with the company

In this way, the company makes clear its value proposition to the customer, and reduces the complexity associated with bringing in new media.

4.3 Insist on Metrics

It is not always possible to have robust metrics from the start, but it is important to put some measures in from the beginning as it's the only way you can determine whether it adds value. The usual metrics for measuring impact in marketing campaigns and corresponding return on investment are reach, frequency, and

time/attention spent on the company's message. This consumer behaviour within social media is measured through a variety of factors such as number of likes, comments, discussions, replies, page visits, and so on.

These activities can be linked to the investment made and a correlation made between customer engagement and actual returns on investment. For example, Adidas described how they recruited 200,000 fans to Facebook from one short campaign. A spokesperson said this would generate an incremental £13.2 million of annual revenue. That equates to £65 per consumer per year. (Woodcock, Green et al. 2011). With this information it is possible to have access to how much attention the company is getting. And this knowledge, built on customer behaviour, attitudes and mood, will help drive benefits throughout the company.

4.4 Have Actionable First Steps

Experience has shown that attempting to create a detailed plan for action throughout the company is not feasible. (Levy 2013) It is better to phase in the programme, beginning with making visible its use of social media within and outside the company, moving on to using specific tools that perform clearly defined tasks, and ending with the broad use of social media that achieves company objectives.

Gradual implementation enables the company to move more easily towards a full implementation, enjoying the benefits along the way and without necessarily having to wait for the organisation to change.

Woodcock, Green & Starkey (ibid.) suggest using 100 day periods with each period having a list of action steps and clearly defined measurements.

Real benefits in each period can then be determined and time allowed to plan for the next period in detail. This allows the link to strategic objectives to be maintained. It also shows the achievements and pitfalls to management for them to take action as appropriate.

5. Conclusion

The strategic use of social media brings two clear advantages to a firm. First, social media can convert the costly process of finding customers to a more efficient and effective two-way street where customers can find the firm as well. Second, having found customers, social media can allow the firm to engage them in ways that both encourage loyalty and manage expectations. The use of social media in a business must ultimately be to sell products and services to customers. This determines company strategy given the resources of the firm. The Social Media Canvas offers a process that ties the company's strategy to the direct use of social media. It also offers useful insights on how social media may present further opportunities to the company. Social media creates strategic value when it is directed by the senior management's vision of the enterprise. It can do this only if it is embedded within the customer relationship which entails finding customers, developing trust, and maintaining that relationship over time. Its success depends on whether the firm is willing and able to invest in material resources to transform relationships into valuable interactions.

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Trip Advisor as a Tool of Customer Relationship Management of Turkey's Hotels

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Abstract: The emergence of social media as a virtual system for advertising and customer management developed as user-generated content forcibly reshaped corporate communications. Corporations began using these virtual media to further develop their customer relationship management scheme. Customer relationship management has in turn allowed those corporations which make use of social media to transmit information related to the services of corporations directly to their customers through the Internet, while at the same time finding out their customers' positive or negative views of their business. This study aims to determine how hotels in Turkey benefit from social media within the scope of customer relationship development. Therefore, the hotel reviews in Trip Advisor (TA) have been viewed as a communication channel within the scope of the study, which is a phenomenon somewhat unique in the tourism sector, since TA is one of the most widely used international social networks by travelers. It was analyzed whether the hotels took their reviews in TA into consideration when developing their web sites. The study employs qualitative methods such as context analysis and in-depth interviews with hotel management were carried out. The hotels selected for the study were the most reviewed hotels in Turkey, according to the data on TA. Between December 2011 and December 2013, the reviews on these hotels and the hotels' web sites were analyzed contextually and results determined to what extent hotels benefit from social media when developing their web sites. The results have been supported by in-depth interviews with the hotels' management. The results of this study shown that although a majority of hotel administrations are aware of the importance of communicating with their customers through social media, they have not used TA as a source of data to develop their web sites in the context of customer relationship management.

Keywords: Social Media, Customer Relationship Management, Travel Business, Trip Advisor, Turkey, Web Sites

1. Introduction

Fast developing technology has made it crucial that businesses establish one-to-one communication with the customers to be leaders in the sector, even more than in the past. "Several authors emphasize the potential for shifting from a mass market to an individualized, or one-to-one, marketing environment" (Payne and Frow, 2005: 170). Utilizing web 2.0 and mobile technologies which allow individuals to express their views on a particular subject or event on the Internet, businesses have had the opportunity to reach a mass of information that exerts influence over the consumer preferences of individuals. In addition, while web based interaction reduces service costs, it also provides flexibility to the corporations and the chance to select customers in according to the quality of experience desired (Winner, 2001: 89).

The speed of change in information communication technologies has changed the tourism sector as well. Customers of the tourism sector now receive a great deal of their information from social media, determining their travel preferences accordingly. According to PhoCusWright, nine out of ten people who travel read online views about tourism products and services (hotels, restaurants and destination) and believe them (Eröz and Doğdubay, 2012: 144). Therefore, online sites such as TA constitutes a source for the tourism sector to understand the issues, as well as what customers are both satisfied and not satisfied with. Peter O'Connor (2010: 769) has examined how London 100 hotels managed their images on TA, reaching the conclusion that they need to use social media more effectively to manage their reputations online.

This study, analyzed whether corporate web sites, which are a significant tool in the customer relationships of hotels, have developed in line with positive and negative reviews which appear in social media. A determination has been made as to the level of importance Turkish hotels gave social media within the framework of customer relationship management.

2. Customer Relationship Management and New Communication Environments

"CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segment" (Payne and Frow, 2005: 168). Therefore, management determines their key customers with the aim of maximizing profit. CRM allows the targeting of time and resources towards economic growth; selling products to very eager customers and avoiding those people who do not wish to buy them; therefore, it allows business to keep valuable, faithful customers (Subasi et al, 2013: 63-64). At this point, the concept of customer satisfaction carries great importance.

Customer satisfaction is a psychological concept which expresses good feelings or contentment provided by the fulfillment of expectations after purchase (Bei and Shang 2006: 3, Pizam and Ellis, 1999:327). Analyzing customer feedback related to satisfaction illustrates the accuracy of the strategy. Consumers who receive satisfactory replies to their complaints increase their allegiance to the producer (Kozak, 2007:139). These complaints also increase service quality through the reduction of weak points in the company.

Innovations in technology in customer relationships are of revolutionary quality. The 1980s and 1990s were the time period in which computers started to take root in people's daily lives and in business. "The term 'customer relationship management' emerged in the information technology vendor community and practitioner community in the mid-1990" (Payne and Frow, 2005: 167). The quick spread of the Internet and the inclusion of social media into customer relationship management as part of a database has given birth to the concept of social CRM. "Social CRM is an emerging concept that includes strategies, processes and technologies to link the Social Web with CRM processes" (Reinhold and Alt, 2011: 227). Social CRM provides an opportunity for businesses to assess and evaluate their customers' expectations, satisfaction, and dissatisfaction with the service they give through data mining and to further develop the company.

3. Methodology

The literature research performed on customer relationship management illustrates how businesses evaluate the customers' reviews. Research highlights their strategies and how social media is used to understand customer satisfaction. Within the scope of the research, TA's data have been extremely beneficial because; "all data entered by users is scrutinized by Trip Advisor to insure that it conforms to content guidelines" (O'Connor, 2010: 761). Hotels which are located in 10 areas defined by TA as *top destinations* and hotels with the most reviews have been analyzed. Hotels which have been subject to separate case studies consist of Hilton SA in Ankara (205 reviews), Sirkeci Mansion in Istanbul (1986 reviews), Liberty Hotels Lara (1513 reviews), and Kelebek Cave Hotel in Goreme (1234 reviews). The data was taken between the dates of December 2011 and December 2013 and was based on which hotels received the most reviews. Ankara Hilton SA which (5 stars) is an international chain hotel is one of 24 Hilton hotels in Turkey. Sirkeci Mansion, a boutique hotel in Istanbul, is a family owned business. It is located in the historical peninsula in Istanbul, close to museums and historical centers. Liberty Lara Hotel, which is a part of a national hotel chain, has a private beach in the Mediterranean, located in Antalya in the south of Turkey, and is the center of summer tourism in the country. The Kelebek Cave Hotel is located in Goreme, where the Rock Sites of Cappadocia, among UNESCO's world historical heritage list, is located, is a family business provides service based on its historical appearance and serving of local food.

The reviews on these hotels have been used in a context analysis directed at understanding the issues the customers were satisfied with in terms of the hotels. A semantic resolution was performed and the reviews have been categorized in line with this resolution. Further, the hotels' corporate web sites have been qualitatively evaluated in accordance with these categories.

4. Findings and Interpretation

4.1 Analysis of Customer Reviews on TA

When the context of the reviews in TA about Ankara Hilton SA were analyzed, it was determined that the most commonly mentioned subjects (as seen in Table 1) in accordance with the customers' satisfaction from the higest to lowest levels were: *staff quality, location, breakfast, comfort of rooms, cleanliness of rooms health and wellness services, view of rooms, conference/business facilities, restaurants/bars, size of rooms, executive*

service, internet services, swimming pool and pool area, smoke in rooms and security. According to the reviews, the customers were most dissatisfied with the hotel over *Internet Services* and *smoking in rooms.*

Table 1: Customer Reviews on Trip Advisor about Ankara Hilton Sa

	High Level of Satisfaction	Low Level of Satisfaction
staff quality	64	5
location	52	
breakfast	35	1
comfort of rooms	30	1
cleanliness of rooms	30	1
health and wellness services	25	-
view of rooms	18	-
conference/business facilities	17	-
restaurants/bars	13	1
size of rooms	12	-
executive services	9	-
internet services	7	14
swimming pool and pool area	5	-
smoking in rooms	-	7
security	-	-

The main issues which come to the fore at the Sirkeci Mansion, another hotel within the scope of the study (as seen in Table 2), in accordance with the customers' satisfaction from the highest to lowest levels were: *complimentary services, staff quality, location, breakfast, health and wellness services, cleanliness of rooms, rooftop bar and restaurant, view of rooms, comfort of rooms, size of rooms, bathrooms of rooms, organizing trips, swimming pool, orientation (about the hotel and the city), interior design of the hotel and wi-fi signal*. It was observed that negative reviews were made about the Sirkeci Mansion Hotel's *size of rooms* and *bathrooms of rooms.*

Table 2: Customer Reviews on Trip Advisor about Sirkeci Mansion Hotel

	High Level of Satisfaction	Low Level of Satisfaction
complimentary services	650	-
staff quality	623	-
location	559	-
breakfast	542	-
health and wellness services	167	-
cleanliness of rooms	144	-
rooftop bar and restaurant	123	-
view of rooms	117	
comfort of rooms	111	-
size of rooms	97	12
bathrooms of rooms	96	14
organizing trips	76	-
swimming pool	36	-
Orientation	35	-
interior design of the hotel	34	-
wi-fi signal	33	-

The main issues at Liberty Hotels Lara in Antalya (as seen in Table 3), in accordance with the customers' satisfaction from the highest to lowest levels were: *beach and beach facilities, staff quality, swimming pool and pool area, restaurant choices, cleanliness of rooms, check-in process, taste of food, entertainment facilities for adults, comfort of rooms, view of rooms, breakfast, drinks, entertainment facilities for children, minibar,*

dinner, family-oriented, balcony of rooms, air-conditioning in rooms, special day offers, location, wi-fi signal, decoration of rooms, design of the hotel, check-out process, size of restaurants, size of rooms and maintenance of rooms. *Staff quality* is the top issue which received the most negative reviews. The only issues which received no positive reviews were: *check-out process, size of restaurants, size of rooms and maintenance of rooms.*

Table 3: Reviews on Trip Advisor about Liberty Hotels Lara

	High Level of Satisfaction	Low Level of Satisfaction
beach and beach facilities	1109	51
staff quality	957	202
swimming pool and pool area	702	10
restaurant choices	445	15
cleanliness of rooms	402	11
check-in process	357	32
taste of food	350	12
entertainment facilities for adults	297	10
comfort of rooms	184	9
view of rooms	148	7
breakfast	108	5
drinks	104	9
entertainment facilities for children	102	-
minibar	91	-
dinner	80	5
family-oriented hotel	58	-
balcony of rooms	35	-
air-conditioning in rooms	23	10
special day offers	21	1
location	15	5
wi-fi signal	13	4
decoration of rooms	7	13
design of the hotel	6	11
check-out process	-	29
size of restaurants		36
size of rooms	-	7
maintenance of rooms	-	12

The issues at the Kelebek Cave Hotel in Goreme (as seen in Table 4), in accordance with the customers' satisfaction from the highest to lowest levels were: *breakfast in the hotel, organizing the trips, breakfast on the owner's farm, location, authenticity of rooms, comfort of rooms, cleanliness of rooms, view of restaurant and bars, view of rooms, airport shuttle services, food services, dinner, check-in and check-out process, swimming pool and pool area, bathrooms of rooms, complimentary food and drink services, interpretation of rooms on website, health and wellness services, discounts, wines, size of rooms, booking, local food* and *wi-fi signal*. The negative reviews about the hotel as seen in Table 4 were much less than the positive reviews.

4.2 The Relationship between the Hotels' Web Sites with Customer Satisfaction

As part of Hilton Hotels, Ankara Hilton SA's web page can be reached through Hilton's international web site and searched by category of its country location. While the Ankara Hilton SA's *staff quality aspect* is the characteristic the customers indicated a high level of satisfaction with, this issue has not been given space in the hotel's web site at all. On the other hand, *location* was also one of the areas for which the customers indicated a high level of satisfaction and was underlined on the web site of the hotel. According to the TA reviews, while one of the characteristics which the customers indicated a high level of satisfaction with was *breakfast*, it was not underlined in the main page under the heading dining. In the same manner, while customers indicated a high level of satisfaction with *view of rooms* and *cleanliness of rooms*, this characteristic of hotel rooms was not given placement on the main page, or under the page, rooms and suits. Alternatively,

the information on how many rooms there are in the hotel and the comfort of the rooms was consistently emphasized. On the main page, instead of directing the attention of the user to view large-scale photographs of the hotel's rooms, more general images of the interior design of the room placed on the web site regardless of the limited nature of its impact. According to the TA reviews, customers indicated a high level of satisfaction with the *Health and Wellness Services.*. It was observed that, this characteristic was given space on the hotel's main page, but the user could not reach more detailed information about these services through the web site. Further, Ankara Hilton SA privileged characteristics on the website that were in conflict with the user reviews on TA, especially *wi-fi signal* and *smoking in rooms*. While Internet speed is emphasized in the page as a privileged characteristic, customers indicated a low level of satisfaction with wi-fi signal.Customers also indicated a low level of satisfaction with *smoking in rooms.* The reviews on TA about the rooms having a cigarette smell conflict with the web information about the *comfort of rooms* and the hotel's stated non-smoking policy. It is possible that such conflicting information could damage the reputation of the hotel, having a negative effect on customer relationships. Ankara Hilton SA Revenue Manager Agata Balazinska was contacted in order to gain more detailed information and the research questions have been sent upon her request via e-mail, however a reply was not received. However, it is known that the hotel is managed by Hilton international which may account for the delay.

Table 4: Reviews on Trip Advisor about Goreme Kelebek Cave Hotel

	High Level of Satisfaction	Low Level of Satisfaction
breakfast in the hotel	232	2
organizing the trips and tours	231	1
breakfast on the owner's farm	160	-
location	124	-
authenticity of rooms	92	-
comfort of rooms	88	1
cleanliness of rooms	82	-
view of restaurant and bars	76	-
view of rooms	63	-
airport shuttle services	61	-
food services	43	-
dinner	40	-
check-in and check-out process	34	1
swimming pool and pool area	32	3
bathrooms of rooms	29	7
complimentary food and drink services	28	-
Interpretation of rooms on website	26	-
health and wellness services	25	-
discounts	22	-
wines	15	-
size of rooms	12	4
booking	12	2
local food	9	-
wi-fi signal	9	4

The reviews on TA about the Sirkeci Mansion Hotel, *complimentary services* which the customers indicated a high level of satisfaction with has been underlined in many ways in the hotel's web site. Besides information on the cash discount made upon entry to the hotel's web site, information about a free transfer service from the airport to the hotel and the free dinner on the first night at the hotel were given through a popup window. This service and complimentary services were given in two places on the website, under the offers and activities headings, and in the menu. Another characteristic which the customers indicated a high level of satisfaction with was *staff quality*. In parallel to the reviews on TA, the hotel staff was presented to the user on the hotel's website, under the meet the team heading, along with their names, duties, and photographs. *Location* was another area which customers indicated a high level of satisfaction with, was presented through text and photographs on the website. Alternately, *breakfast* which customers indicated a high level of satisfaction , was not highlighted on the website. Another characteristic of the hotel which customers

indicated a high level of satisfactionwith is*health and wellness services.* These services were given space on the hotel's webpage under the heading facilities, together with the hotel's restaurant. *Cleanliness of rooms* which customers indicated a high level of satisfaction was supported with photographs on the webpage, while view of the rooms which is the other characteristic customer indicated a high level of satisfaction, was not mentioned. *Comfort of rooms* which was an especially underlined characteristics in the TA reviews, which customers indicated a high level of satisfaction, was given under the heading why choose us at the bottom of the page, however did not grab attention right away. In addition, size of rooms and bathrooms of rooms which was given under the heading why choose us were the only issues which customers indicated a low level of satisfaction must be taken into consideration as an issue to develop the web site. While r*ooftop restaurant and bar* characteristic which the customers indicated a high level of satisfaction in the TA reviews, no photographs were given on the hotel's webpage of the restaurant or the bar. *Organizing trips* characteristic which was indicated as a high level of satisfaction in the TA reviews was given under the subheading city tour under the heading activities in the menu of the hotel's web page. Although characteristics which were indicated as a high level of satisfaction in the TA reviews, other aspects related to the hotel which were not given space on the website were *orientation about the hotel and the city* and *wi-fi signal*. These findings show that the hotel has not transferred most of the issues which the customers indicated a high level of satisfaction with to its web site. Mr. Sukru Aras, Receptionist of Sirkeci Mansion Hotel, stated in an interview on 10 November 2013 that, the reviews on TA about Sirkeci Mansion Hotel were followed, all positive or negative reviews were shared with all of hotel staff and their communication with customers prior to and after their stay at the hotel was maintained through e-mail. Although Mr. Aras stated that the hotel's web site was updated every fifteen days and that they create the contents of their web site in accordance with the expectations of their customers, it is possible to say that the content of the web site did not fully reflect the issues the customers were most satisfied with on TA.

When the website of the Liberty Lara Hotel was analyzed, information which grabbed the attention of the user first was the site's compatibility with mobile devices. This application showed that the hotel management gave priority to establishing communication with its customers through information communication technologies. When the website's content was analyzed in terms of the reviews on TA, *beach and beach facilities* which the customers indicated a high level of satisfaction with were among those in the photo gallery; however they were not indicated on the main page as a distinguishing characteristic of the hotel. *Staff quality, taste of food, restaurant choices, view of rooms, comfort of rooms, balcony of rooms,* and *cleanliness of rooms* were among the other characteristics which the customers indicated a high level of satisfaction within the reviews in the TA. While these positive characteristics related to the rooms were especially underlined through expressions on the website such as, friendliness, cleanliness and delicious under the heading the liberty difference, *comfort of rooms* was presented through photographs under the heading rooms. It was also observed that photographs showing the view of the rooms were not given space on the website. Another characteristic which the customers indicated a high level of satisfaction with the hotel staff and their attitude was the *check-in process*. However, it has been observed that this characteristic was not presented in an attention-grabbing manner on the main page. *Entertainment facilities for adults* and *entertainment facilities for children* which the customers indicated a high level of satisfaction with in the TA reviews were presented under the heading activities on the main page of the hotel. The characteristics which the customers indicated a low level of satisfaction with on TA were *decoration of rooms* and *design of the hotel*. It was found that the hotel managers were aware of these negative reviews. Mrs. Melek Kaya, Reservation Chief of Liberty Lara Hotel, stated in an interview on 3 November 2013 that, they analyzed the reviews on TA, and began alterations of plans for the redesign of the hotel and its rooms and would be sharing these new on their corporate web page at a later date. It has also been observed that the hotel's web site took the negative reviews in social media into consideration, but did not reflect the positive reviews on its web site in order to further develop its customer relationships. However, the interview did reveal that there the hotel employed an e-commerce manager. This showed that the hotel placed importance on being interactive with its customers in terms of sales through its website. In addition, Mrs. Kaya also stated that they updated the hotel's web pages each day, giving importance to communicating with their customers through e-mail and also announced the hotel's special campaigns to their customers in this manner.

It was observed from the reviews of customers on TA about Kelebek Special Cave Hotel in Goreme that, *breakfast in the hotel* and *breakfast on the owner's farm* characteristics were the characteristics of the hotel which the customers indicated a high level of satisfaction with. The customers in particular indicated that the breakfasts were organic and that the breakfast on the owner's farm was organized as a tour. Upon analysis of

the main page, information related to the breakfasts were given two sentences under the restaurant and bar heading where information about the restaurant was presented, however the breakfasts which were a striking characteristic of the hotel were not given space under a separate heading, or in an additional attention grabbing manner. *Organizing trips* which was another characteristic reviewed positively by the customers was given space under the service and tours heading.

The *location* which the customers indicated a high level of satisfaction with was given space as separate menu heading on the webpage and it was emphasized that the hotel was in a location close to the center of the town, where the fairy chimneys could be viewed. *Comfort of rooms, cleanliness of rooms, size of rooms, authenticity of rooms*, and *view of rooms* were other characteristics positively reviewed by customers. The heading about rooms was placed at the top of the page on the hotel's webpage and visuals indicating the *size of rooms, comfort of rooms*, and *cleanliness of rooms* was shared. On the other hand, views which the customers indicated a high level of satisfaction with rooms were not presented in the photographs showing the rooms. *Health and wellness services, swimming pool* and *pool area* were reviewed positively, while *airport shuttle services* provided by the hotel to its customers were also found satisfactory in patron reviews. These services were placed under the *services & tours* heading on the webpage. Although *view of restaurant and bars, food services, diner, wines and local food* were details on TA that gained especially positive reviews, the restaurant and the bar were only mentioned briefly under the heading services and tours on the hotel's website. However, according to the reviews on TA, these characteristics of the hotel were the most alluring characteristics making the restaurant and the bar distinctive. *Interpretation of rooms on website, discounts* and *booking* were other positively reviewed characteristics on TA.

Discounts were placed on the upper right hand side of the web site in an attention-grabbing manner. Detailed information on *booking*, which the customers indicated a high level of satisfaction, was presented on the site; however sales were not carried out over the web. In the interview with General Manager Mert Kura on 9 November 2013, it was found that the hotel's web site was updated once every week, social media was followed, however the web site was not updated in accordance with the reviews on social media. Instead, communication with the customers was developed and maintained either face-to-face or through e-mail and that the reviews on TA about the hotel were shared with the staff at meetings held once a week. Further, Mr. Kura stated that they did not carry out online sales over the website.

5. Conclusion

The hotels selected within the scope of the study are informed about the issues what their customers' satisfaction level with the servicesthrough the reviews on TA. However, although they have different organizational structures, these hotels do not evaluate the reviews on TA through data mining and do not use the data they obtain from TA fully in developing their web sites. This shows that they do not organize the information communication technologies they use in customer relationship management in an integrated manner. On the other hand, the hotels' that develop the content of their web sites in line with the customer satisfactions on TA will make them more likely to reach their CRM targets. In this manner, they can harness the effect of word of mouth communication created by social media to their web sites. As a result, they will be able to maximize their profits through targeted CRM, using their time and resources productively.

Within the scope of the study, the identification of conditions brought to the fore on the hotel's web site, but reviewed negatively according to the reviews on TA, shows that hotels do not evaluate social media and their web sites jointly within their system of customer relationship management. It is possible to say that the conflicting information given on the web site and the customer experiences will cause the customers to lose their trust in the hotel.

Finally, this study brings forward a discussion on the usefulness of corporate web sites. Hotels' web sites are not able to reflect characteristics which may satisfy the customers as well as the customer reviews in social media have. Accordingly, we ask, are web sites a communication tool which need to be developed better to transmit information to the customers? Or does the word of mouth effect of social media naturally prevent the content transmission on the web sites? It must also be taken into consideration that CRM is an integral part of information sharing and customer development. This discussion most usefully related to the impact of corporate web sites versus social media.

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Investigating Civic Engagement Behaviour on Facebook from a Social Capital Perspective

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Abstract: The reoccurring perception that there is a civic deficit in society has heightened the need for the government, researches and other practitioners to understand more clearly the factors that encourage civic engagement behaviour. Considering that Facebook has extended considerably with over one billion users, this social media platform is a potential communication channel for people to learn, develop and sustain civic behaviour. While there are promising evidences that citizens are making concerted efforts in adopting Facebook for civic engagement, research on their civic behaviour from a social capital viewpoint in the social media context remains limited. This paper integrates the social capital theory to construct a model for investigating the motivations behind people's online civic behaviour. The study holds that the facets of social capital — social interaction ties (structural), trust (relational), shared languages and vision (cognitive), will influence citizens' civic engagement behaviour on Facebook. Empirical data collected from 1,228 Facebook users provide support for the proposed model. The results revealed that online civic engagement behaviour is established under trusting relationships, close social interactions and having common grounds on goals and languages as its conditions. Citizens are utilizing Facebook for protest-related actions, posting of issues and expressions to organise and lobby for changes necessary in addressing social issues. At the same time, increased social interactions among Facebook members help to build trusting relationships with members, creating opportunities to be civically engaged in addressing social issues. Similarly, shared languages and visions engender trusting relationships among members. The statistical analysis also indicated that online civic engagement behaviour is a multifaceted construct, consisting of online civic publication and online civic actions modes. The analyses provide support for the contention that asserts the civic potential of social media. This paper may serve as the catalyst for new directions of future research on social media activism for addressing social issues.

Keywords: Facebook, social networking sites, trust, civic engagement, social capital, social media.

1. Introduction

There is a growing concern that citizens are politically apathetic and lack of civic awareness (Bennet, 2008; Putnam, 2000). Scholars have illustrated the anaemic level of civic engagement from a political perspective, in particular among the younger generation (e.g. Macnamara, Sakinofsky, and Beattie, 2012; Loader, 2007). These reports raise the concerns about the nature of a civic society per se; are we becoming a less caring generation now than before? And more importantly, how can we foster civic engagement among citizens? In response to these concerns, Bennett (2008:21) argued for a need to 'bridge the paradigms' with new technologies or else citizens, digitally inspired or not, will remain disconnected from civic life.

Recently, there have been growing social media interactivity in ways that suggest a reinvigoration in civic engagement in the public sphere. For example, studies have suggest that Facebook is a powerful tool for political activism (Steenkamp and Hyde-Clarke 2014; Valenzuela, 2013) and for advocacy on social problems (Warren, Sulaiman and Jaafar, 2014). These works present an array of examples and prospects of a growing civic involvement of Facebook users in *addressing* social problems by educating, informing and organising themselves online to take action on issues. Thus, social media resembles a direct form for community participation where many real world civic tasks can now take place online. While the examples constitute promising evidence that citizens are adopting social media for civic engagement, little is known about the mechanisms of social media influenced civic behaviour from a social capital perspective. There are also relatively few studies on the phenomenon of civic engagement behaviour in social media as implied by Valenzuela (2013). Moreover, Correa, Hinsley and de Zúñiga, (2010) have encouraged the need to develop a richer measure of social media use for understanding civic behaviour and more importantly, what promotes online civic engagement (Valenzuela, 2013; de Zúñiga, 2012).

In response to the gaps identified and the calls for future research, this study examines how Facebook is shaping the landscape of civic engagement in social media by: (i) determining the facets of social capital (i.e.

structural – social interaction ties, relational – trust and cognitive – shared languages and vision) which motivate online civic engagement behaviour (ii) examining the relationship between social interaction ties and shared languages and vision on trust; and (iii) exploring the modes of online civic engagement behaviour.

2. Literature Review and Hypotheses

2.1 Social capital, social media and civic engagement

According to Nahapiet and Ghoshal (1998:243), social capital is 'the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit'. Their conceptualisation of social capital consists of three dimensions, namely structural, relational and cognitive. A number of scholars applied this conceptualisation of social capital to investigate behaviour in knowledge sharing or integration (e.g. van den Hooff and Huysman 2009; Chiu, Hsu and Wang, 2006). Considering that individual's behaviour to willingly share is a product of their structural, relational and cognitive capitals, we draw on the social capital theory to investigate the influence of the facets of the three dimensions of social capital on civic engagement behaviour in social media. Moreover, the theory anchored by Nahapiet and Ghoshal (1998) has yet to be applied in examining citizen civic behaviour on social media.

Social media are online applications and technologies that enable user generated content, sharing of information, and collaboration amongst a community of users (Kaplan and Haenlein, 2010). Examples include Facebook, Twitter and YouTube. Statistics from Socialbakers (2013) indicate that social media usage remains on the rise, particular with Facebook, which has activities ranging from social (Manago, Taylor and Greenfield, 2012) to business (Brennan and Croft, 2012). Recently, there are evidences suggesting that citizens who engage in civic and political activities are frequent users of social media (Pearce and Kendzior, 2012; Bekkers et al, 2011). These civic efforts include online participation of political opinion expressions and protesting; volunteering and lobbying on social issues. Based on Ehrlich's (2000, Preface, p. vi) definition of civic engagement as a 'means working either through political or non-political processes to make a difference in a community…', the aforementioned civic efforts constitute as online civic engagement behaviour. We argue that social capital as a theory can be coupled with the diffusion of social media for addressing social problems.

From the psychology perspective, scholars have found that voluntary online participation behaviour for content sharing are contingent upon an individual's motivation and social capital factors. For example, some studies found that individuals voluntarily contribute their knowledge on electronic networks when they perceive that it augments their reputations (Tang et al., 2012; Farzan et al., 2008) and when they are structurally embedded in the network (Wasko and Faraj, 2005). Similarly, Polletta and Jasper (2001:290) argue that being an activist becomes a 'prized social identity', which supplies the 'incentive to participate'. Such findings provide support for the notion by Dinas and Gementis (2013) that intangible benefits often involve psychological gains stemming from civic efforts.

In Japan, the relational factor, trust, reduces the uncertainty entailed in their decisions to engage in civic efforts, particularly to donate money for various causes (Taniguchi and Marshall, 2012). In organisational studies, commonly shared goals is said to serve as a 'bonding mechanism' that integrates resources (Tsai and Ghoshal, 1988, p. 467). This was evident in Chiu, Hsu and Wang's (2006) study on knowledge sharing in a virtual community, where shared languages and visions increased the online content sharing behaviour. Other scholars suggested that social media can encourage identity construction for individuals and groups , which according to Dalton, Sickle, and Weldon (2009) are key antecedents of political behavior, by allowing multiple networks of social interaction for feedback, acceptance, and reinforcement of norms (Papacharissi 2010).

While some celebrate the importance and potential of social media in perpetuating online civic engagement, others argue that civic efforts should not be Facebooked or tweeted (Gladwell, 2010). As such, endorsing the ability of social media to produce pro-social behaviour can be quite a daunting task. Conversely, a number of scholars have indicated that social media use supplements social capital which are related to traditional forms of civic engagement such as engendering community activity (e.g. Lovejoy and Saxton, 2012). Thus, the fundamental question is whether the social capital developed on social media is resilient enough to stimulate members to contribute their valuable resources such as time, money, effort and knowledge in addressing social issues, especially when no extrinsic reward is provided. Following the social capital theory proposed by Nahapiet and Ghoshal (1988), a theoretical model is developed to address the research question, see Figure 1.
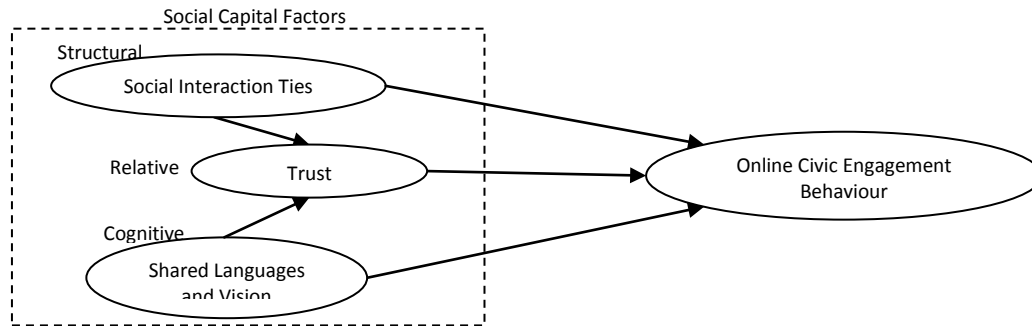
Figure 1 Theoretical model

2.2 Hypotheses

2.2.1 Social Interaction Ties

The first dimension of social capital is the structural dimension, i.e. social interaction ties. This study adopts Chiu, Hsu and Wang's (2006) understanding of social interaction ties which represents the strength of the relationships, the amount of time spent, and the communication frequency among online members. The social interaction ties on social media allow a cost-effective way of accessing a wider range of sources (e.g. Kaplan and Haenlein, 2010). Previous studies have suggested that higher social interactions strengthens and maintains social ties with a larger, more diverse group, thus extending potential resource exchanges (e.g. Young, 2011; Chiu, Hsu and Wang, 2006). This finding echoes the argument made by Nahapiet and Ghoshal (1988, p. 252) that 'network ties influence both access to parties for combining and exchanging knowledge and anticipation of value through such exchange'. In a similar vein, a considerable number of civic engagement studies in social media have implied the importance of social interaction ties in civic participation (e.g. Valenzuela, 2013; Gibson and McAllister, 2012). Following this notion, we posit the following hypothesis:

H1: Facebook members' social interaction ties are positively associated with their level of online civic engagement behaviour.

2.2.2 Trust

The second dimension of social capital is the relational dimension, i.e. trust. Fukuyama, (1995:26) defines trust as 'the expectation that arises within a community of regular, honest and cooperative behaviour, based on commonly shared norms, on the part of members of that community'. There is a body of literature which contends that trust may function as a contributory factor or a catalyst for civic participation. For example, trust is encourages problem solving effectiveness (Klimoski and Karol 1976) and for civic involvement (Taniguchi and Marshall, 2012). Trust is also an influential factor in predicting e-commerce (Pavlou and Gefan 2004; Lee and Turban 2001). In this domain, users take a direct, measurable risk (of losing money), which makes trust an important construct. This risk may be less salient in other domains, such as online civic engagement on social media because no actual transaction takes place. Instead, the purpose of engagement is much dependent on the issue at hand, which is the social cause advocated and the information exchanged. As civic involvement often requires a range of different resources, especially from with people we do not know personally, such civic efforts may be instigated by trust (e.g. Graddy and Wang, 2009). Hence, we argue that trust is a salient construct in motivating online civic engagement behaviour. Following the notion that trust has the ability to reduce uncertainty and influence online participatory behaviour and that trust matters in predicting informal than formal civic work, this study proposes the following hypotheses:

H2: Trust is positively associated with the level of online civic engagement behaviour.

In another perspective, Carey, Lawson and Krause (2011:279) suggested that 'social interaction ties act as conduits for information and resource flows providing the time, opportunity and motivation to strengthen the relational aspects of the relationship'. The findings from Tsai and Ghoshal (1998) resonates the statement as they found that social interaction ties had a strong effect on trust in the context of production innovation within an organisation. In addition, social capital researchers (e.g. Xu, Perkins and Chow, 2010; Kim, 2007) have

indicated that trust and social ties in networks can create the context for collective problem resolution. Thus, we propose that the strength of social interaction ties among individuals is likely to increase the level of relational capital present in the context of Facebook usage for civic engagement.

H3: Facebook members' social interaction ties are positively associated with trust.

2.2.3 Shared Languages and Vision

The third dimension of social capital is the cognitive dimension, i.e. shared languages and vision. According to Lesser (in Chiu, Hsu and Wang, 2006:1878), 'Shared language goes beyond the language itself; it also addresses the acronyms, subtleties, and underlying assumptions that are the staples of day-to-day interactions'. When members of a group have a common perception about how to interact with one another, possible misunderstandings in their communication could be avoided (Tsai and Ghoshal, 1998). Similarly, shared vision is said to embody to be 'a bonding mechanism that helps different parts of an organisation to integrate or to combine resources' (Tsai and Ghoshal 1998: 467), thus allowing them to be more willing to contribute resources. Some scholars assert that shared values bind the members of social networks and communities, make cooperative action as much as possible (Robert, Dennis and Ahuja, 2008). On the contrary, there is a possibility that shared language could have no impact on sharing behaviour as shown by the findings of Chiu, Hsu and Wang (2006). Drawing on the earlier camp on the positive impact of having shared languages and vision on content contribution, this study holds that shared languages and vision influences people's trust and their online participatory behaviour to gain the necessary access to resources needed to achieve a common goal. Accordingly, hypotheses 4 and 5 are as follows:

H4: Facebook members' shared languages and vision are positively associated with trust.
H5: Facebook members' shared languages and vision are positively associated with their level of online civic engagement behaviour.

3. Research Methodology

3.1 Sample and Data Collection

According to a survey by GlobalWebIndex (2014), Facebook is currently the world's most popular social network. With the over 1 billion users (Facebook, 2013) base and the growing presence of activism, Facebook is a potential avenue for citizens to be involved in civic engagement. A random sample of 1,500 active Facebook users aged 15 to 40 residing in geographical areas with high social media penetration were selected. The data was collected on a face-to-face basis between June 1 and October 8, 2013. We received 1,257 responses, resulting in an 83.8 per cent response rate. 29 surveys were rejected as incomplete. Of the 1,228 completed and usable surveys, 61 per cent were female. The majority of the respondents were single (67 per cent). Most of the respondents were from the age category of 20 to 29, this result is similar to the age group findings from the Pew Internet Project's (Brenner 2013) research related to social networking.

3.2 Instrument development

To ensure content validity, we adapted existing scales wherever possible from the existing literature. The items were scaled on a five-point Likert scale, ranging from one (strongly disagree) to five (strongly agree). We adopted the items for the social capital factors, i.e. social interaction ties, trust and shared languages and visions from Chiu, Hsu and Wang (2006). The measurement scales for the online civic engagement behaviour construct, i.e. civic publication and civic action modes, were adapted from prior literature (Denning 2000; Gil de Zúñiga, Jung and Valenzuela, 2012; Valenzuela, Arriagada and Scherman, 2012) and validated in a series of procedures to ensure content validity, construct validity, and reliability (Straub 1989). Next, the questionnaire was pilot tested with 20 doctorial students to evaluate the phrasing and clarity of the indicators and adequacy of the domain coverage. All of the online civic engagement behaviour items were on a five-point scale: Never (1), rarely, (2), sometimes, (3), often (4), and always (5). After the pilot test, the instructions for the questionnaire were further refined prior to administration of the survey.

3.3 Statistical Analysis

For a more robust approach, the validity, reliability and hypotheses were assessed using two methods. Structural equation modelling (SEM) using AMOS and linear regressions via SPSS were applied to test the five

hypotheses. SEM was employed following the recommended two-stage analytical procedures by Anderson and Gerbing (1988). The first step involves the analysis of the measurement model, while the second step tests the structural relationships among latent constructs. Furthermore, two sets of linear regressions, one for trust and another for online civic engagement behaviour as the dependent variable were tested.

4. Research results

4.1 Measurement Model Analysis

4.1.1 Exploratory Factor Analysis

We conducted various tests to assess the construct validity and reliability of the instrument using two sequential methods: examining the exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Principle components factor analysis using varimax rotation was conducted which resulted in five factors. These explained 69.17 per cent of the variance, and all the items loaded highly on their related factors. This affirms the unidimensionality of the constructs. All item loadings were above 0.50 on their own construct (Hair et al. 2006). The reliability of the constructs measured by Cronbach's alpha, varied from 0.79 to 0.89. These values suggest that the instrument has adequate reliability (Nunnally 1978). See Table 1.

4.1.2 Confirmatory Factor Analysis

We conducted CFA using Analysis of Moment Structures (AMOS). The purpose of conducting CFA was to (1) validate the psychometric properties, (2) examine whether the measurement model achieved an acceptable goodness-of-fit, and (3) investigate its convergent and discriminant validity, and reliability. The ratio fit of the measurement model was 3.595, well-below the cut-off point of 5.0 (Wheaton et al, 1977). The root mean squared error of approximation (RMSEA) was 0.048, which was below the 0.08 cut-off level (Hair et al. 2006). In addition, the normed fit index (NFI=0.955), the Tucker Lewis index (TFI=0.960) and confirmatory fit index (CFI=0.967) were greater than the required value of 0.90. Finally, the goodness-of-fit (GFI=0.952) and adjusted GFI (AGFI=0.936) were greater than the threshold value of 0.90 (Hair et al, 2006). Thus, it can be concluded that the measurement model fitted the data well.

For convergent validity: (1) all indicator factor loadings should be significant and exceed 0.50 (Hair et al, 2006). Fornell and Larcker (1981) suggested two other criteria to assess convergent validity – the composite reliabilities should exceed 0.70, and the average variance extracted (AVE) for each construct should exceed the variance due to the measurement error for that construct, resulting in extractions exceeding 50 per cent of variance. As shown in Table 2, AVE values were well above the cut-off value of 0.50. The composite reliabilities (CR) were all well above 0.70 while all factor loadings in the CFA model exceeded 0.50 and were significant at $p=0.001$. Therefore, it is evident that the model met all three conditions for convergent validity.

We then tested the discriminant validity by comparing the square root of each factor's AVE with its correlation coefficients with other factors (Fornell and Larcker, 1981). From Table 2, we can see that all square roots of AVEs were larger than their corresponding correlation coefficients with other factors. Thus, our data reveal good discriminant validity. Based on these results, the measurement properties of the model are acceptable.

Table 2: Correlation matrix and square roots of AVEs (in bold).

	Trust	Social interaction ties	Shared languages and vision	Online civic engagement behaviour
Trust	**0.737**			
Social interaction ties	0.484	**0.785**		
Shared languages and vision	0.732	0.594	**0.749**	
Online civic engagement behaviour	0.570	0.537	0.552	**0.763**

4.2 Hypotheses Testing

The structural model analysis result is depicted in Figure 2. Among the three facets of social capital, social interaction ties was found to have the highest coefficient path and had a positive and significant relationship with online civic engagement behaviour (H1: β =0.31, p <0.001).Thus, supporting hypotheses H1. Similarly, this

structural factor had a positive and significant impact on trust (H3: β =0.09, p <0.05). The results also indicated that the structural and cognitive factors had significant roles in influencing the relational factor. Social interaction ties and shared languages and vision explained a fairly high amount of variance on trust (R^2=0.52). For hypotheses 2, trust has proved to be a greater significant predictor than shared languages and vision on for online civic engagement behaviour (H2: β =0.29, p <0.001; H5 β =0.16, p <0.01). The statistical results also indicated that shared languages and vision influences trust in a positive and significant manner (H4: β =0.67, p<0.001). Similarly, this cognitive capital significantly predicts online civic engagement behaviour (H5: β =0.16, p<0.1). The three social capital factors together explained 42 per cent of variance on online civic engagement behaviour. Overall, the model demonstrates a good fit with all fit indices within the recommended ranges. The ratio fit was 3.339, well-below the cut-off point of 5.0 (Wheaton et al, 1977). RMSEA=0.042, NFI=0.959, TLI=0.964, CFI=0.971, GFI=0.957 while the AGFI=0.941 were greater than the threshold of 0.90 (Hair et al 2006), thus indicating that the model fits the data well. See Table 3. Similarly, the findings from the multiple regression analysis resonates the significant findings from the structural model analysis. The three facets of social capital significantly positively predict online civic engagement behaviour. Both the structural and cognitive factors also influence the trust in a positive and significant manner, echoing the results from SEM.
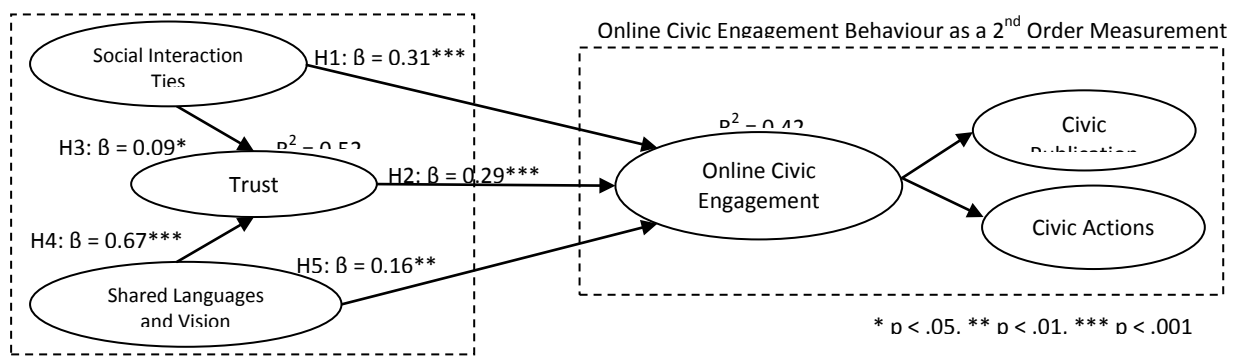
Figure 2. Statistical Results for the Model

Table 3. Model Fit

Fit indices	Recommended Value	Research Model
χ^2/df	≤ 5.00	3.339
GFI	≥0.90	0.957
AGFI	≥0.90	0.941
CFI	≥0.90	0.971
TLI	≥0.90	0.964
NFI	≥0.90	0.959
RMSEA	≤0.08	0.046

5. Discussion

The overarching purpose of the research was to investigate online civic engagement behaviour from the perspective of the social capital theory. We analysed the individual impact of each dimension of social capital on civic engagement behaviour on Facebook. We looked at the effects of the structural and cognitive dimensions on trust. The empirical analysis supported the hypotheses posed and the model developed. We present the following three implicative findings:

Finding 1. *Social interaction ties, trust and shared languages and vision motivate online civic engagement behaviour.*

The results of this study suggest that the facets of social capital can contribute to online civic engagement behaviour. Social interaction ties factor was found to be the strongest predictor, thus indicating the importance of interactions in civic communication. This finding provides empirical support to Nahapiet and Ghoshal's (1998) argument that "the fundamental proposition of the Social Capital Theory is that network ties provide access to resources" (p. 252). The network ties on Facebook provide the opportunity for its members to combine and exchange resources, in particular to inform, clarify on issues and to comprehend the views of others in addressing social problems. In support of previous research (Xu, Perkins and Chow, 2010; Kim, 2007), trust was found to significantly influence both types of online civic engagement behaviour. The results

suggests that under the perception of people being trustworthy and honest, people are more willing to use Facebook as a 'civic tool' to express concerns on social problems through links, postings, signing of petitions and coordinating events online. It also suggests that the belief that people can be relied upon and not take advantage of others will allow positive perceptions to manifest in the users' minds as a willingness to accept Facebook as a channel for civic activities. The results further revealed that commonality in communication pattern and language fosters online civic engagement behaviour. Facebook users who advocate on the same social cause would interact using the same method or tool, such as postings of messages, links and pictures on the issue on Facebook. The results resonates the findings by Xiang, Lu and Gupta (2012) that the cognitive capital has a positive influence on cohesive mannerism.

Table 1: Results of measurement model analysis

Construct	Items	Loadings	Cronbach α	CR	AVE
Social interaction ties	I maintain close social relationships with some Facebook users.	0.73	0.79	0.83	0.62
	I know some Facebook users on a personal level.	0.70			
	I have frequent communication with some Facebook users.	0.91			
Trust	Facebook users will not take advantage of others even when the opportunity arises.	0.64	0.86	0.85	0.54
	Facebook users will always keep the promises they make to one another.	0.79			
	Facebook users would not knowingly do anything to disrupt the conversation.	0.64			
	Facebook users behave in a consistent manner.	0.78			
	Facebook users are truthful in dealing with one another.	0.82			
Shared languages and vision	Facebook users use understandable communication pattern during the discussion.	0.73	0.85	0.84	0.56
	Facebook users use understandable narrative forms to post messages or articles.	0.72			
	Facebook users share the vision of helping others solve their professional problems.	0.81			
	Facebook users share the same value that helping others is pleasant.	0.74			
Online civic engagement behaviour:			0.89	0.74	0.58
Civic publication	Post links on social issues on Facebook.	0.79			
	Post photos/videos/images of issues on Facebook.	0.86			
	Post news on social issues on Facebook.	0.86			
Civic actions	Plan activities that address social issues on Facebook.	0.67			
	Send invites on social issues related event using Facebook.	0.67			
	Get assistance with others on social issue events on Facebook.	0.79			
	Sign up as a volunteer using Facebook.	0.80			
	Sign a petition using Facebook.	0.72			
	Submit a complaint to an official using Facebook.	0.70			

Finding 2: *Facebook can fulfil a variety of civic communicatory needs for problem solving.*
The results suggest that online civic engagement behaviour includes two modes, i.e. civic publication and actions. These activities include mobilizing civic behaviour such as signing of petitions, making official complaints to authorities, coordinating civic events and fostering civic awareness through postings on social problems. On this note, the present study supports previous findings (Valenzuela, 2013; de Zuniga et al, 2012) on social media usage for protest behaviour. Consequently, the findings underscore that Facebook is able provide the communicatory needs for problem solving. Thus, the argument here moves away from any suspicion that Facebook is merely a convivial tool. Also, the findings suggest that Facebook facilitates as a civic communication channel rather than pinpointing it as a cause of political action (e.g. Valenzuela 2013).

Finding 3. *Social capital factors are interrelated in predicting online civic engagement behaviour.*

The factors of social capital are themselves interrelated in the sense that the cognitive and structural capital engenders trust. The interconnections of these dimensions although slightly varied in previous studies were consistent with past findings by Tsai and Ghoshal (1998), and more recently by Xiang, Lu and Gupta (2012) on their study on social capital and shared mental models.

5.1 Theoretical Contributions and Practical Implications

This paper makes four key contributions. First, it extends the knowledge on social media usage to include online civic engagement behaviour modes for addressing social issues. The study emphasizes that social ties, trust and commonly shared language with a similar goal in mind can stimulate two types of civic modes, i.e. civic publication and actions. Second, to the best of our knowledge, this is the first study that applies Nahapiet and Ghoshal's (1998) manifestations of the three factors of social capital and applies them to the study of online civic engagement behaviour for addressing social problems on Facebook. The study reflects the important facets of social capital in studying online civic engagement behaviour in an informal social media environment such as Facebook. By considering the influence of the three factors of social capital on online civic engagement behaviour, we could avoid the bias of singling out any of the factors to be insignificant in a similar context. Moreover, the results of the statistical tests from the study adds knowledge to the trust literature by ascertaining that social ties and shared languages and vision among Facebook users can enhance the confidence levels among members. Third, we contributed to the methodology in understanding social media via the development of an instrument which measures online civic engagement behaviour in addressing social issues from a social capital perspective. Fourth, while previous research has predominately focused on the political aspect of civic engagement, the study examines the influence of social capital on civic contributions particularly in addressing problems using social media. In sum, by explicating the unique role of social capital on social media, this paper contributes to the continued development and success of social media usage for pro-social behaviour.

The results of this study also carry implications for practitioners. Social activists, the government and policy makers could use Facebook to mobilize their social causes and in an attempt to increase civic involvement among citizens, particularly the youth. In this sense, addressing social problems through social media may indeed contribute to a proliferation of a networked society and a more participatory one as suggested by de Zúñiga (2012). Corporations could also facilitate the use of social networking sites as an informal way to reinforce their corporate social responsibilities to their staff.

6. Conclusion and future research

This paper presented answers to the hypotheses developed and met its objectives in delivering new insights concerning how Facebook is shaping the landscape of civic engagement using the social capital theory. Civic efforts on Facebook are positively influenced by social interaction ties, trust and shared languages and vision among its users. This social media has enabled different forms of civic engagement, i.e. citizens are posting links on social issues; pictures, news and images of social issues on Facebook pages to generate awareness of these issues; members are utilizing the features of Facebook to plan events such as campaigns, connect with others through invites and sign online petitions. Social interaction ties trust and shared languages and vision are significant determinants in predicting online civic engagement behaviour on Facebook in two ways, i.e. through civic publication and civic actions. Moreover, Facebook appears to be an enabler for civic behaviour, thus, indicating that the new media can foster civic behaviour among citizens.

Despite the new insights brought by this study as discussed, the analysis has several limitations. First, by employing survey data, it is constrained to a self-report of social media use for civic engagement, which may yield inaccurate measures resulting from social desirability bias. Second, because this study is cross-sectional in nature, hence causal inferences cannot be made. As such, a longitudinal study on the phenomena of online civic engagement behaviour is recommended for future research. Third, we analysed a single social media platform, thus, the results cannot be generalized to all social media platforms. Future research could include comparison studies on different social media platforms in fostering civic behaviour, examining the actual efficacy of online civic behaviours and applying various methods to uncover the modes of civic behaviour.

Limitations notwithstanding, this study provides an initial foundation for research on the role of social capital in fostering online civic engagement behaviour in addressing social problems. The results of this study

demonstrate the capability of Facebook to afford citizens of different perspectives the ability to coalesce and engage in addressing social issues through online expressions, discussions and actions. Furthermore, the results show that citizens are seeking beyond recreational use of Facebook and are harnessing the capabilities of Facebook to engage in issues they care about. There is a little doubt of the underlying possibilities that social media such as Facebook offers in fostering online civic engagement behaviour.

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Social Media Initial Public Offerings (IPOs): Failure and Success Factors

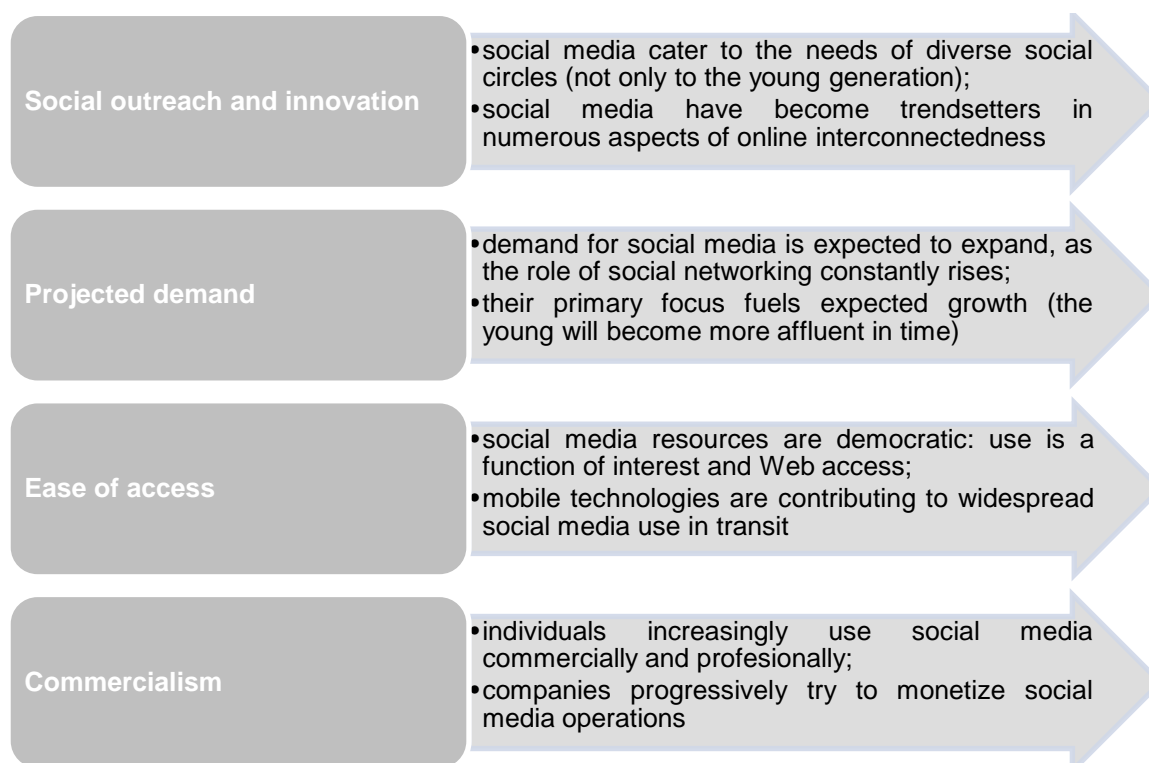**Piotr Wiśniewski**
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Abstract: Social media organizations have increasingly tapped public stock markets, yet – despite their undisputed public appeal and improving economics – the success of several high-profile IPOs has been rather lackluster. This paper revisits the going-public strategies of leading international social media stocks and identifies their failure and success factors from the operating, commercial and behavioral perspectives. Among the companies covered by the research are the top components of the Solactive Social Media (Total Return) Index (SOCL): widely perceived as the most globally representative benchmark of exchange listed social media equities (including Facebook, Inc., Tencent Holdings Ltd., Sina Corp., LinkedIn Corp., Pandora Media, Inc., Groupon, Inc., Yandex Nv, Dena Co. Ltd., Google Inc. and Zynga Inc.) as well as selected recent IPOs (including Twitter, Inc.). The paper tracts the origins of the social media companies, their IPO decisions as well as their flotation and aftermarket performance. The analysis leads to conclusions and recommendations relating to future social media IPO scenarios (with particular emphasis on prerequisites of successful IPO management with regard to social media initiatives). Given the novelty and limited record of most social media public flotations, the paper represents a pioneering research effort aimed at explaining the utility of the IPO route for the global social media industry.

Keywords: social media, Initial Public Offerings (IPOs), social media investment, social media economics

1. Social Media Economics

Social media are emerging as one of the most innovative segments of information technology. Despite opaque economic fundamentals and limited records of existence in the public market domain, the outlook for online creating and sharing user generated content is generally viewed as promising. Figure 1 sums up the key drivers of social media's envisaged expansion.

Social outreach and innovation	• social media cater to the needs of diverse social circles (not only to the young generation); • social media have become trendsetters in numerous aspects of online interconnectedness
Projected demand	• demand for social media is expected to expand, as the role of social networking constantly rises; • their primary focus fuels expected growth (the young will become more affluent in time)
Ease of access	• social media resources are democratic: use is a function of interest and Web access; • mobile technologies are contributing to widespread social media use in transit
Commercialism	• individuals increasingly use social media commercially and profesionally; • companies progressively try to monetize social media operations

Source: own elaboration.

Figure 1. Key drivers of social media's anticipated growth

2. Social Media as a Commercial Concept, Business Tool and Investment Asset

The history of social media as a commercial concept is limited (in practice dating back to the turn of the millennium). Initially, social media had been viewed as grassroots collective initiatives with modest business relevance. Gradually, the sector has attracted commercial attention in two major ways (or their combinations):

- *social media as a facilitator* of existing offline or online business operations, including the use of social media data in the investment management process (McGuire 2013);
- *social media as an investment* asset *per se* (through exposure to individual equities, but also collective investment forms).

Additionally, the asset management industry has recently begun to eye opportunities provided by the widespread take-up of social interconnectedness (Stratford *et al.* 2013, Radeljic 2013). Accordingly, by far more strategic emphasis is necessary from this industry to commercialize social media channels (McGuire 2013). In accordance with concepts posited by Bültmann *et al.* (Bültmann et al. 2012) the learning curve of asset management organizations gradually embracing social media (as the new frontier of business origination and development) is passing through the following stages:

- *awareness* (noting growing consumer enthusiasm for social media use in other industries and at competitors),
- *discovery* (launching business initiatives focused on a single social medium, e.g. Facebook),
- development (initiating a single objective enabled by social media and crafting a tactical response around that objective),
- *experience* (recognizing diverse opportunities provided by social media and formulating a set of dedicated objectives to address them),
- *championship* (optimally and effectively interacting with various consumer audiences via social media and firmly embedding a social media strategy within the overall corporate strategy).

Even more restricted is the ability to invest in publicly listed social media stocks or collective investment schemes. Given the novelty of social media investing, the following challenges have been identified as critical in the process of investment due diligence (cf. Harvard Business Review 2010):

- *business metrics*: this groundbreaking segment of online interconnectedness and content sharing requires commensurately trailblazing approaches to gauging operating efficiencies – their underlying methodologies are still in flux (cf. Kaske *et al.* 2012);
- *successful monetization*: among the principal challenges to setting up and developing viable business models based on social media has been the indistinct potential for predictable value extraction – although some of the early social media initiatives have now begun to break even, many are still struggling to demonstrate immediate commercial soundness;
- *ongoing innovation*: most social media companies are "hit driven", i.e. to remain competitive they constantly have to roll out new inventions (their business renewal being a function of organic research and development or successful merger and acquisition activity);
- customer acquisition and retention: another factor closely linked to the ongoing propensity to innovate – social media have to attract and satisfy an ever-sophisticated and demanding pool of high-tech savvy customers.

In view of the rising significance of passive investing (especially by way of exchange traded funds, ETFs), whose proliferation has defied the ebb and flow of other collective investment forms (TheCityUK 2013), it is worth illustrating the fortunes of social media companies in aggregate, through a composite benchmark.
The most representative vehicle enabling investment exposure to worldwide social media is the Global Social Media Index (SOCL). Its (maximum 50) components comprise worldwide social media operations that fulfill two key prerequisites (cf. Solactive 2012):

- *public status*: the obvious precondition for inclusion into the index is prior admission to public trading and adequate stock market capitalization and liquidity (free-float);
- *global outreach*: not only should the SOCL components have domestic visibility (i.e. be leaders in their country of origin) but they are also expected to be able to draw audiences beyond their local market.

Both defining features imply the use of languages representing cohorts resident in large countries and/or dispersed globally. Table 1 shows the top 15 equities incorporated in the index (with their trading, company, country and currency characteristics as well as weightings towards the composite value).

Table 1. Top 15 Components of the Solactive Social Media Index (SOCL) as of March 21, 2014

Ticker	Company Name	Country	Currency	Weighting
FB UW Equity	Facebook	US	USD	12,85%
700 HK Equity	Tencent	China	HKD	12,77%
LNKD UN Equity	LinkedIn	US	USD	8,46%
SINA UW Equity	Sina	China	USD	7,70%
ZNGA UW Equity	Zynga	US	USD	6,18%
YELP UN Equity	Yelp	US	USD	5,83%
P Un Equity	Pandora	US	USD	5,59%
GOOG UW Equity	Google	US	USD	5,07%
TWTR UN Equity	Twitter	US	USD	4,90%
2432 JT Equity	DeNa	Japan	JPY	3,77%
GRPN	Groupon	US	USD	3,77%
YNDX UW Equity	Yandex	Russia	USD	3,59%
3659 JT Equity	Nexon	Japan	JPY	2,92%
YOKU UN Equity	Youku	US	USD	2,73%
3632 JT Equity	GREE	Japan	JPY	2,43%
Total				88,56%

Source: Solactive (2014) Social Media Index, Index Reporting, Solactive AG, Frankfurt a.M., Germany, pp. 1-2. The index offers interesting insights into the performance of listed social media businesses against the broad equity stock market (epitomized by three well established recognized indices, i.e. the Dow Jones Industrial Average, the Standard and Poor's 500 and the NASDAQ). The following observations are noteworthy in this respect (Figure 2):

- *inauspicious debuts*: the social media segment got off to an unpromising start: most of the stocks trailed the broad equity indices during the initial phase of the prolonged stock market rally;
- *high volatility*: clearly, social media have exhibited a heightened variance (attesting to their unsettled fundamentals);
- *recovery and outperformance*: despite the humble start, the social media segment has managed to overcome initial weakness and outrun the broad listed equity indices at year-end 2013.

Figure 2. Solactive Social Media Index (SOCL) Performance against the Dow Jones Industrial Average (DJI), Standard and Poor's 500 (S&P 500) and the NASDAQ in 3 April 2012- 3 April 2014

Source: Yahoo! Finance charts [online] available from: http://finance.yahoo.com/q?s=socl&ql=1 [04.04.2014]. The SOCL index can also be analyzed more thoroughly and consistently through the prism of portfolio efficiency – combining returns with various metrics of investment risk, as per the (Post)Modern Portfolio Theory (Swisher, Kasten 2005) (Le Sourd 2007). It is evident that the globally listed social media stocks making up the SOCL index have substantially benefited from a sustained presence in the publicly listed domain. Following unimpressive debuts, they have recouped losses not only in absolute terms, but also began to narrow the gap in risk adjusted results (Table 2).

Table 2. SOCL Performance (Absolute and Risk Related) for different periods ending on 31 March 2014

Category in US$	30 Days	90 Days	180 Days	360 Days	YTD	Inception
Performance	-6.8%	+0.3%	5.2%	49.4%	-2.2%	+42.7%
Performance (p.a.)	-57.3%	+1.4%	+10.8%	+50.3%	-9.7%	+16.3%
Volatility (p.a.)	21.7%	+21.2%	+22.2%	+20.5%	+21.7%	+20.6%
High	+155.27	+155.27	+155.27	+155.27	+155.27	+155.27
Low	+141.44	+137.80	+126.86	+92.49	+137.80	+80.39
Sharpe Ratio	-2.66	+0.05	+0.47	+2.44	-0.46	+0.77
Maximum Drawdown	-8.9%	-8.9%	-10.0%	-10.0%	-8.9%	-22.7%
VaR 95\99	-93.0%\ -100.0%	-33.4%\ -47.8%	+25.8%\ -40.9%	+16.6%\ +2.6%	-45.4%\-60.2%	-17.6%\-31.7%
CVaR 95\99	-100.0%\	-42.2%\ -55.0%	-35.1%\ -48.5%	+8.0%\ -4.3%	-54.5%\-+67.6%	-26.2%\ -38.6%

Source: Index Reporting – Solactive Social Media Index, Solactive AG, Frankfurt a.M., Germany, available at: http://www.solactive.com/indexing-en/indices/equity/solactive-indices/ [accessed: 31.03.2014].

An even more detailed analysis is possible at the level of individual stocks comprising the SOCL. As shown in Table 3, the global leaders in social media tend to be:
- *relatively aggressive*: their investment betas (β) are slightly higher than one (on average), although several defensive stocks can be demonstrated as well;
- *overvalued vs*. the broad market: social media companies command valuations much elevated than the vast majority of listed equities in other industries;
- *volatile in earnings, cash generation and management efficiencies*: numerous social media companies have been operating at accrual losses, negative operating cash flows and are yet to prove their scale related efficiencies;
- *working capital positive*: most social media companies appear to have elevated levels of short-term financial liquidity.

Table 3. SOCL components: risk, valuation, financial liquidity and management efficiency measures as at March 26, 2014

Company	β	P/E	P/BV	P/S	EV/EBITDA	CR	ROA (%)	ROE (%)	ROS (%)
Facebook	2.10	98.83	10.63	21.02	39.29	11.88	11.07	11.02	19.06
Tencent	1.21	49.33	13.43	12.67	25.96	1.61	17.06	31.24	25.75
LinkedIn	1.24	830.36	8.51	14.66	128.24	4.29	1.26	1.51	1.75
Sina	2.19	89.65	3.33	5.97	63.76	6.46	0.64	3.11	6.79
Zynga	2.75	n/a	2.06	4.66	43.66	4.49	-1.43	-2.00	-4.24
Yelp	2.61	n/a	11.26	23.68	6,890.00	16.68	-1.41	-3.09	-4.32
Pandora	0.53	n/a	11.41	8.95	-344.76	3.33	n/a	n/a	-4.50
Google	0.89	29.31	4.35	6.36	19.23	4.58	8.60	15.36	21.60
Twitter	0.68	n/a	8.48	37.63	-47.80	11.42	-18.93	-36.09	-97.06
DeNa	0.84	4.82	1.35	0.93	2.33	2.07	n/a	n/a	n/a
Groupon	0.66	n/a	7.38	2.09	31.66	1.32	2.32	-12.24	-3.71
Yandex	2.75	22.15	6.34	7.48	16.85	5.62	13.88	32.22	34.11
Nexon	n/a	9.13	0.88	1.75	2.79	4.32	8.65	11.48	19.40
Youku	2.82	n/a	3.35	9.95	84.62	3.44	-3.98	-6.33	-19.18
Gree	0.99	18.49	25080	1.86	5.70	2.38	9.15	14.12	9.97
Median	1.23	29.31	7.38	7.48	25.96	4.32	2.32	3.11	4.27

Source: Yahoo! Finance: http://finance.yahoo.com/ [accessed: 26.03.2014]. CR = Current Ratio.

Table 4 provides a more specific review of business lines represented by the companies making up the SOCL index. Their core business descriptions are complemented by presenting returns fetched by the initial public offerings (IPOs) at the close of first day trading, for the trailing (past) twelve months and are illustrated by analyst recommendations (heavily skewed towards buys).

Although in the aforementioned context it would be premature to pronounce comprehensive judgment on the complexity of social media IPO management, the following observations come to the fore (cf. Shemen 2013) :
- *staging*: it can be postulated that many of the recently listed IPOs came on the stock market at stages when no clear path towards lasting operating cash flow generation or fundamental commercialization (based on operating cash flow sustainability) could safely be plotted – their stockholders and managements need to balance out pressing refinancing exigencies with the uncomfortable message that a lackluster or failed IPOs send to the aftermarket;
- *IPO timing*: as nascent, speculative, aggressive stocks, social media companies should be floated in a protracted bull market (no matter how distinctive their core operations, they remain highly vulnerable to downside volatility, especially in light of their fragile business models);
- *IPO management*: numerous social media IPOs have been priced rather aggressively (at the higher end of the valuation spectra) and have been plagued by technical problems (the most flagrant of these affected Facebook's IPO on the first trading day).

Table 4. SOCL components: their business models, IPO and return histories, investor perceptions and outlooks as at March 31, 2014

Company	Business model	IPO date (dd.mm.yyy)	RIPO (%)	RTTM (%)	Recommendations (buy/hold/sell)
Facebook	online social networking, content sharing and messaging services	18.05.2012	0	+111	42/14/1
Tencent	mass media, entertainment, Internet/mobile value added services, online advertising	16.06.2004	+12	+118	34/10/2
LinkedIn	business and career oriented professional social networking	19.05.2011	+109	-4	24/18/0
Sina	multiple service online media including microblogging and infotainment	10.10.2000	+22	+18	8/3/1
Zynga	standalone and mobile phone social gaming services	16.12.2011	-5	+21	2/14/3
Yelp	online urban guide with social networking features	02.03.2012	+64	+163	16/12/0
Pandora	online music streaming and automated music recommendation service based on mathematical algorithming	15.06.2011	+9	+121	12/9/1
Google	Internet based services and products including: search, cloud computing, software, and online advertising	19.08.2004	+18	0	37/10/0
Twitter	online social networking and microblogging service enabling users to send and read short text messages	07.11.2013	+73	n/a	3/10/10
DeNa	mobile portal, e-commerce, internet advertising, social gaming provider	17.02.2005	+7	-16	10/8/4
Groupon	bargain website featuring discounted gift certificates usable at local or national companies	04.11.2011	+31	+29	10/11/2
Yandex	largest search engine in Russia provider of ancillary online services and products	25.05.2011	+55	+32	9/0/0
Nexon	developer and publisher of video games	13.12.2011	-2	-9	8/5/0
Youku	video hosting and video library service	08.12.2010	+161	+58	4/3/1
Gree	social networking service (operating a platform for communication and content sharing)	17.12.2008	+52	0	3/12/4

Source: http://finance.yahoo.com/ [01.04.2014], http://www.bloomberg.com/markets/stocks/ [01.04.2014], http://www.ft.com/intl/markets/equities [01.04.2014], http://www.marketwatch.com/investing/stocks?link=MW_Nav_INV [01.04.2014]. RIPO: Return on IPO (measured as the difference between the initial offering price and the first trading day close). RTTM: Return for Trailing Twelve Months (ending 31 March 2014).

3. Conclusions

Although it would be rash and incautious to judge the full effect of recent flagship initial public offerings (IPOs) by global social media companies, tentative conclusions can be postulated in such a context. They include the need for:

- *more careful time management*: several social media IPOs appear to have been ill timed – a more propitious timing of many of the flotations would have resulted in improved post-IPO performance and would have been better received by diverse investor classes;

- *superior IPO management* (overall): recurring book-building, pricing and technical mishaps surrounding the IPOs indicate that more seamless organization and hands-on focus are requisite for the proper handling of future social media listings;

- *pre-IPO integration*: to some extent, the uneasy fortunes of several social media IPOs have arisen from inadequate prior integration of their business models (via organic or external growth); greater emphasis on pre-IPO preparation will go a long way towards minimizing many of the risk factors associated with the social media sector.

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An Empirical Phenomenological Investigation into the Infotainment Blogosphere: A Case Study of 'Beautifulnara' in Malaysia

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Abstract: This paper is an empirical phenomenological investigation into the infotainment blogosphere focusing on a Malaysian blog titled 'beautifulnara.com' which, up until 2013, had received 5,648,777 visitors. In terms of general demographics, these visitors tended to have an age range of 15-39 years, to be middle class and were either employed or university students. Moustakas (1994) suggests that in empirical phenomenological research, the human scientist determines the underlying structures of an experience by interpreting the given descriptions of the relevant situation, whilst Lester (1999) advocates that the main purpose of such study is to identify and illuminate specific phenomena and this normally translates into gathering deep information and perceptions through inductive, qualitative methods such as interviews, as well as representing findings from the perspective of the research participant(s). Van Kaam (1966, in Moustakas, 1994) also believes that the phenomenological approach can obtain comprehensive descriptions that provide the basis for a reflective structural analysis depicting the essence of an experience. Accordingly, this paper is the result of in-depth phenomenological interviewing that focuses on the details of the writing of one of the most talked-about infotainment blogs in Malaysia and on the blogger's reflections on how he perceives the effectiveness of social media, in particular the blogosphere, cyber consumerism and advertising via a blog. The study also identifies those factors that have led to high consumer awareness of this particular infotainment blog and the level of embedded advertising practice on the blog.

Keywords: Empirical phenomenological; blogosphere; infotainment; advertising.Introduction

1. Introduction

Literally, phenomenology is defined as the logos of the phenomenon (Lewis and Staehler, 2010). Phenomenology, as represented by Frederick Wertz, is a method originally formalised in philosophy that has been widely employed across the humanities, social sciences as well as in service professions and, since the 1960s, phenomenologists have used defined methods for formulating meaning-oriented descriptive knowledge in psychology (Wertz *et al.*, 2011). Phenomenological investigation is mainly concerned with the experience of respondents and its purpose is to investigate on 'what happens when the everyday flow of lived experience takes on a particular significance for people' (Smith, Flowers and Larkin, 2009). Wertz *et al.* (2011) also suggest that phenomenology is neither a doctrine nor a contrived method but, rather, they focus on a diverse, living movement. Edmund Husserl is recognised as one of the major phenomenological philosophers with his notion of 'back to the things themselves (*Zu Den Sachen Selbst*)' (Schneider, Bugental and Pierson, 2001; Lewis and Staehler, 2010), along with other major phenomenological philosophers like Heidegger, Merleau-Ponty, and Sartre (Smith, Flowers and Larkin, 2009). Creswell (2012) also suggests that a phenomenological study should describe 'the meaning for several individuals of their lived experiences of a concept or a phenomenon' and has highlighted two approaches to phenomenological research which consist of hermeneutic phenomenology (Van Manen, 1990) and empirical, transcendental or psychological phenomenology (Moustakas, 1994). Van Manen (1990, in Cresswell, 2012: 59) is more concerned with an interpretive process in which the researcher makes an interpretation about the lived experience (phenomenology) as well as interpreting the 'texts' of life (hermeneutics). Meanwhile, Moustakas's (1994) empirical, transcendental or psychological phenomenology is focused less on the interpretations of the researcher but more on a description of the experiences of respondents (Creswell, 2012: 59). This approach concurs with that of interpretive phenomenological analysis (IPA) as advocated by Smith, Flowers and Larkin (2009) who suggest that, 'When people are engaged with an experience of something major in their lives, they begin to reflect on the significance of what is happening hence the IPA researcher might be interested in looking in detail at how someone makes sense of a major transition in their life.' Moreover, IPA shares the view that human beings are sense-making creatures and, therefore, the accounts which participants provide will reflect their attempts to make sense of their experience (Smith, Flowers and Larkin, 2009). In addition to Moustakas's (1994) empirical, transcendental or psychological phenomenology, Creswell (2012: 59-60) has highlighted how Moustakas focuses on one of Husserl's concepts – epoche (or bracketing) – in which investigators set aside their experiences, as much as possible, to take a fresh perspective towards the

phenomenon under examination; hence, transcendental means 'in which everything is perceived freshly, as if for the first time' (Moustakas, 1994, in Creswell, 2012: 59-60).

2. Methodology

In general, a phenomenological method in humanities research recommends that there should be at least three respondents, primarily because investigating just one or two subjects would be too difficult for the researcher to handle in terms of their own imagination (Giorgi, 2009, in Englander, 2012). Although this study is placed within the phenomenology spectrum in that it is qualitative and has a relatively small sample, our findings are rendered more reliable since the phenomenological aspects are combined with other methods, in particular quantitative data in the form of survey results from 100 Universiti Teknologi MARA (UiTM) bachelor degree students, representing 'Gen-Y' demographic statistics from Shah Alam, Malaysia. The results from the survey are tested and validated through an in-depth interview with the owner of beautifulnara.com. Furthermore, Zahavi (2001, in Englander, 2012) points out that phenomenologists have always argued for the importance of examining not only how a phenomenon appears to an individual subject, but how the phenomenon is present to an intersubjective community. Accordingly, for the in-depth interview with beautifulnara's creator, the main research question addressed is 'What are the blog owner's experiences, thoughts and reflections on owning one of the most talked-about infotainment blogs in Malaysia? Meanwhile, two hypotheses were created for the survey:

H1: The two populations (female and male) are not homogeneous with respect to their opinions on online shopping prompted by the brand advertorials on the beautifulnara blog.

H2: The two populations (female and male) are not homogeneous with respect to their opinions when talking about the safety and reliability of carrying out online shopping prompted by the brand advertorials on the beautifulnara blog.

3. Findings

From the in-depth interview, it can be summarised that beautifulnara's owner, Ahmad Nazuwan bin Amran, believes that his participation in a 2009 national television show called 'Project Alpha, Malaysia's Top Blogger' opened windows to many opportunities for his blog. He admitted that many were surprised by the fact that he is a man who writes an infotainment gossip blog, mainly because of the name 'beautifulnara' itself which implies female owner/ interests. He also explained his collaboration with 'Nuffnang', the Asian Pacific's first blog advertising community and brand advertorials representative. Nuffnang have 1,000,000 bloggers in 8 countries and regions including Malaysia, the Philippines, Australia, China, Hong Kong, Thailand, as well as the United Kingdom, and it claims to help bloggers like beautifulnara.com to generate income through blog advertorials and advertisements for a range of brands (nuffnang.com.my, 2014). In 2011, beautifulnara.com won the Best Entertainment Blog Award at the Nuffnang Asia Pacific Blog Awards, and in 2012 received the Best Entertainment Tourism Blog Award from the Malaysian Ministry of Tourism.

With more than 200,000 blog visitors every day, Nazuwan bin Amran claimed that he is 'amazed' at the capacity offered by presenting brand advertorials on his blog to generate such a lucrative personal income for him. During the interview, Nazuwan bin Amran explained the meaning of 'beautifulnara' which actually translates as 'beautiful country' in the Korean language. The reason he used a Korean word (*nara*) was due to his experience of studying in Korea where he majored in accountancy. Although he refused to comment on the perception that he became an 'instant millionaire' on founding beautifulnara.com, and on his celebrity blogger status, the survey results from the 100 respondents show that this is, indeed, the case. The results from the survey show that the majority of the respondents (n=36, 36.0%) were aware of beautifulnara's owner who, it was deemed, had become a celebrity blogger/instant millionaire. 26.0% of respondents (n=26) also recognised the trend of famous Malaysian bloggers being featured in the mainstream media. Moreover, 23.0% of respondents (n=23) were hoping for the same 'celebrity blogger break'. Despite this, 15.0% of respondents claimed that they were not aware of this trend (n=15).

To further elaborate, the survey data was analysed using IBM SPSS Statistics version 21 for Windows. The descriptive statistics were used to provide background information on the respondents. Other types of descriptive analysis, like bar graphs and pie charts, were created in order to gain background information on the instrument used in this study. In addition, chi square test were performed in order to test the hypothesis regarding the nominal type of measurement.

Respondents' Background Information

Table 1: Respondents' background information.

Background Information	n	%
Gender		
Male	20	20.0
Female	80	80.0
Age		
20 years old	18	18.0
21 years old	10	10.0
22 years old	34	34.0
23 years old	26	26.0
24 years old	12	12.0

To reiterate, there were 100 respondents in this study. 80.0% (n=80) were female respondents and 20.0% (n=20) male. With regard to the age distribution of respondents, the largest group was 22 years old (n=34, 34.0%), whilst the lowest was 21 years old category (n=10, 10.0%).
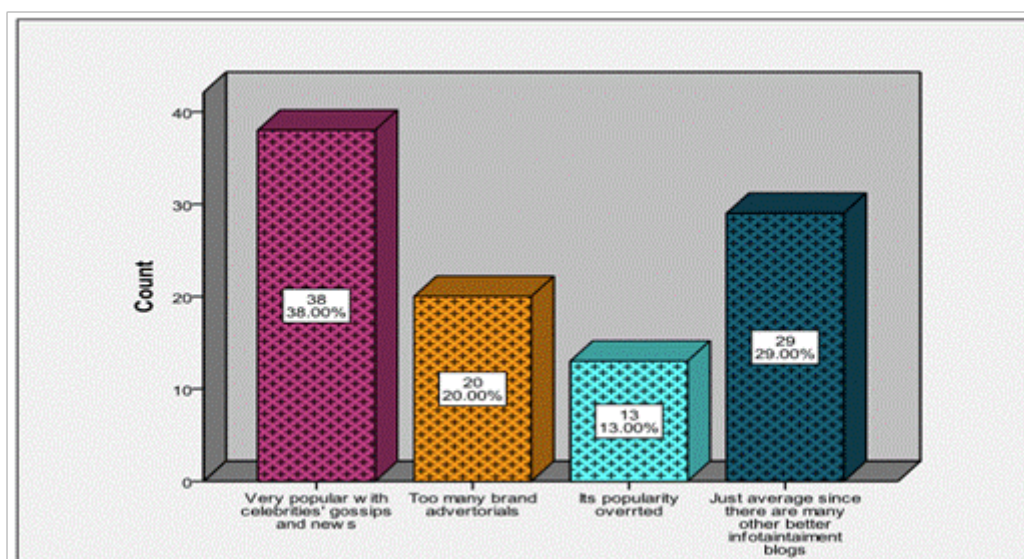
Figure 1: Bar graph of respondents' opinions on beautifulnara as a blog.

From Figure 1, it can be concluded that the majority of respondents believed that beautifulnara is very popular, and is rich in celebrity gossips and news (n= 38, 38.0%), whilst another 29.0% claimed that beautifulnara was just an average blog. 20.0% of respondents felt that there were too many brand advertorials on the blog, and another 13.0% felt that the popularity of beautifulnara as an infotainment blog in Malaysia was overrated.

From Figure 2, it can be seen that the majority of respondents browsed the beautifulnara blog twice a day (n=40, 40.0%), another 30.0% browsed the blog once a day (n=30), whilst 20.0% of respondents preferred to browse between 3-5 times a day (n=20); only 10.0% of respondents browsed more than 5 times a day (n=10). The survey also showed that the majority of the respondents did not buy gossip magazines (n=30, 30.0%) due to all the infotainment that is available on beautifulnara.com, free of charge. Meanwhile, 29.0% of respondents felt that attractive contests and prizes are the attributes that make the beautifulnara blog unique to them (n=29), whilst 26.0% of respondents ranked beautifulnara as amongst the pioneers of infotainment

blogging in Malaysia (n=26). Despite these findings, 15.0% of the respondents did not suggest any unique characteristics to describe beautifulnara and simply categorised the blog as 'typical' (n=15).
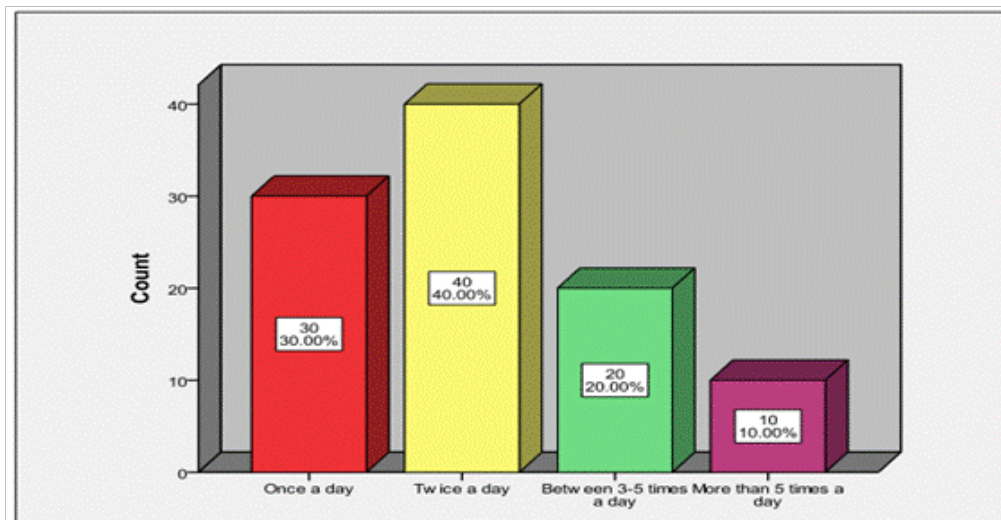

Figure 2: Bar graph showing respondents' browsing patterns on the beautifulnara blog per day.
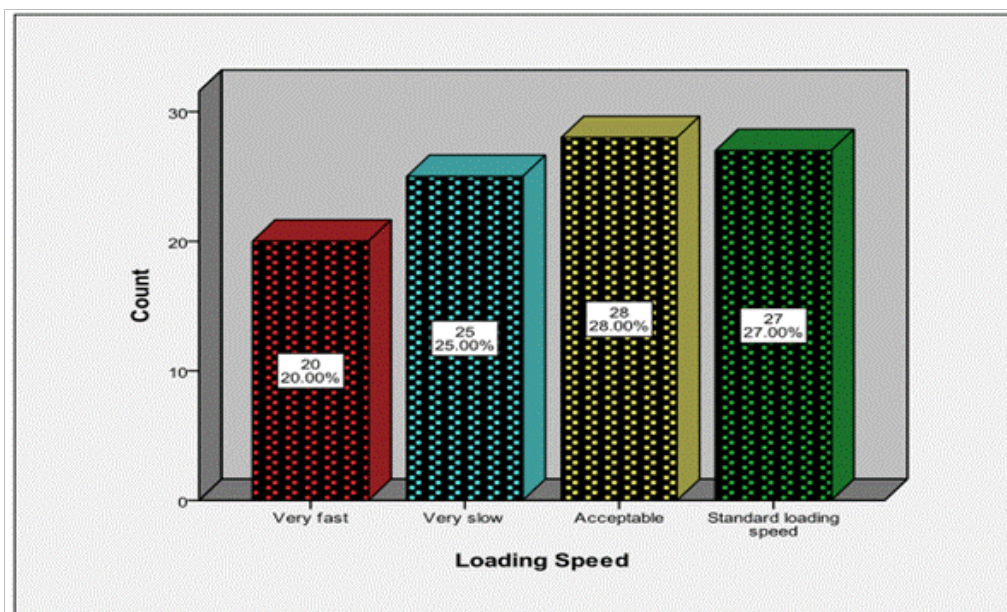

Figure 3: Bar graph describing the loading speed of beautifulnara.

From Figure 3, it can be seen that the majority of respondents commented on beautifulnara's loading speed which they perceived as acceptable (n=28, 28.0%), whilst another 27.0% felt that the loading speed was 'standard' (n=27). 25.0% of respondents described the blog's loading speed as 'very slow' (n=25). On the other hand, 20.0% of respondents felt that it was 'very fast' (n=20).

On the other hand, the survey also shows that the majority of the respondents remembered fashion advertorials on beautifulnara (n=50, 50.0%). Meanwhile, the telecommunications category was comprised of the lowest recalled brand advertorials on the site (n=12, 12.0%). 20.0% of respondents could remember brand advertorials for health products (n=20), whilst 18.0% recalled advertorials in the automobile category (n=18). When asked on advertising community/brand advertorials representative, majority of the respondents in this study stated that they were wholly unaware which company that was responsible for bringing brand advertorials to beautifulnara (n= 55, 55.0%). 24.0% (n=24) of the respondents managed to correctly named Nuffnang as the responsible entity in bringing brand advertorials to the site. However, 16.0% of respondents

(n=16) wrongly chose 'Nuffnuffnang and Napster' (n=5, 15.0%) in their choice of answers. Survey results also show that 53.0% of the respondents in this study claimed that they have done some online shopping arising from the brand advertorials on beautifulnara (n=53), although the remaining 47.0% did not engage in online shopping activities associated with this blog. (n=47).
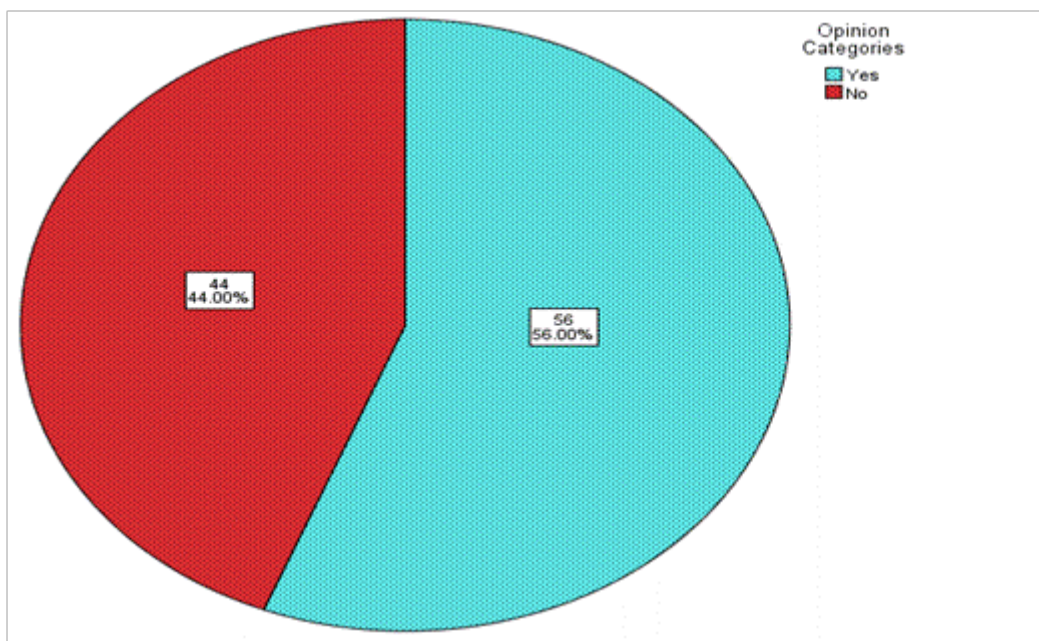
Figure 4: Pie chart showing perceptions of the reliability of online shopping activities on beautifulnara blog.

Meanwhile, Figure 4 suggests that most of the respondents felt that the practice of online shopping on beautifulnara.com is safe and reliable (n=56, 56.0%); 44.0% of respondents, however, took the contrary view.

Daniel (1990) suggests that if the Pearson chi square statistic is not significant (p > .05), this means that the proportion of variables tested was not significantly different between the proportions. Thus, there appears to be no association or relationship between the two variables in this study. These tests have some criteria that need to be fulfilled, which are: (a) the variables must be categorical, or they may be quantitative variables whose measurements are capable of being classified into mutually exclusive numerical categories; (b) the minimum expected cell frequency must be greater than 5 (Daniel, 1990; Pallant, 2010; Coakes *et. al.*, 2010). Assumption (b) can be accepted if the minimum expected cell frequency is as low as 1 if no more than 20% of the cells have expected frequencies less than 5 (Daniel,1990). If assumption (b) is violated, the best solution is for the adjacent rows or columns in the contingency table to be combined to achieve the minimum expected cell frequencies (Daniel, 1990). From the hypotheses, a chi-square test was performed to investigate whether there was some significant differences between male and female students carrying out online shopping from the brand advertorials on beautifulnara and the findings show a significant difference between males and females in terms of online shopping ((1,n =100) = 18.58, p < .001). A chi-square also confirmed that there was also a significant difference (1,n =100) = 6.86, p < .05) between male and female students when discussing the safety and reliability of online shopping on beautifulnara. Both results were valid since the minimum expected cell frequency was above 5 (see Table 2).

Table 2: Summary of results of chi-square test.

Variable		p-value	Minimum Expected Cell Frequency
Gender vs. Online Shopping	18.58	.000**	9.40
Gender vs. Safe and Reliable	6.86	.009*	8.80

Note: * p-value < .05, **p-value < .001.

4. Conclusion

The primary objective of this study was to investigate the blogger's experiences, thoughts and reflections in relation to owning one of the most talked-about infotainment blogs in Malaysia, though using an empirical phenomenological investigation as well as testing two hypotheses created for the survey of 100 students who visit the blog. The findings show the following:

▪ A feature story on a national television show like 'Project Alpha, Malaysia's Top Blogger', as well as a collaboration with an advertising hub/brand representative like Nuffnang provides significant publicity for an infotainment blog like beautifulnara.com and, at the same time, ensures the status of celebrity blogger for the owner, and has significant financial rewards, creating an instant millionaire.

▪ The majority of the 100 Gen-Y student respondents engaged in this study are familiar with blogosphere and are aware of the popularity of top infotainment sites like beautifulnara.com in Malaysia.

▪ It can be concluded that the blogosphere and advertising practices are closely interrelated and that infotainment blogs like are very effective in reaching target demographics through paid brand advertorials.

Acknowledgements

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Ontology of Brand Messaging Domain in Social Media Communication

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Abstract. Understanding and assessment of the characteristics of a brand message posted in social media is a key for effectiveness of marketing and communication strategies. Appropriate brand communication with consumers may build stronger relationships, trust of brand and rise positive reputation. However, the existing studies of brand message construct usually provide informal definition of elements and structure of brand message. Understanding the communication in social media for brand building process requires formal representation of concepts and their relationships in the Semantic Web domain. Such formal representation is known as ontology, and is most commonly described using OWL, a de facto standard language for describing ontologies. Ontologies as engineering artefacts allow to objectify domain concepts, to separate them from their original social context of creation and to transfer them across different domains. In this paper we describe Ontology of Brand Message in Social Media. The ontology describes the relationships between both content variables (tone, topic, visual and audio aids, keywords, manner, encouragement, addressing, URL) and posting characteristics (channels, target audiences, timing, frequency, and message length).

Keywords: social networks, communication in social media, message construct, ontology.

1. Introduction

Modern companies seeking to maintain and strengthen their positions in the market have to overcome challenges emerged by information and communication technologies development and social media popularity. These changes alter the behaviour of market participants (companies and consumers). Consumers are no longer passive receivers of a commercial message, but are empowered to participate actively in the communication process as "prosumers", i.e. consumers that themselves produce content (Collins 2010). This new marketing communication paradigm becomes a challenge for many companies that are pursuing successful communication with their consumers. Participatory culture is emerging, which makes it possible to comment, share, modify and recirculate media content in internet (Jenkins 2009).

The consequence is that companies are losing the possibility to control marketing communication but they obtain tools for consumers' acknowledgment and monitoring in virtual space, as well as to adjust communication according consumers expectations, to "raise" them till loyal consumers, and to measure and evaluate marketing communication impact.

Social media provides opportunities for businesses to communicate and spread their message in different platforms. Social networking sites have been shown to expand business-customer relationship engaging customers personally, having a clearer sense of customer preferences, sentiment, opinions, and introducing feedback into the customer relationship management process (Buzzetto-More 2013). The best customer for companies is no longer the one that buys the product, but the one who contributes to a service or product through social media over time, shares information to his network of friends and followers, exchanges useful feedback and contributes to increasing the brand value (Mandelli *et al.* 2010). However, there is little research on the impact of business-generated content (communication message) on consumers.

To fill this gap, we aim to semantically describe the elements of the brand messaging domain as *ontology* so as to assist its producers and consumers in better understanding of the context of the domain as well as its impact. Ontology refers to a document or file that formally defines the relations among concepts in some domain of interest in the context of Semantic Web (Berners-Lee *et al.* 2001). Ontologies provide a shared and common understanding of a domain that can be communicated between people and heterogeneous and widely spread application systems (Fensel 2001). Ontologies facilitate knowledge sharing and reuse, and also can be used as engineering artifacts when developing business applications. Conceiving ontologies as engineering artifacts allows us to objectify them, separate them from their original social context of creation and transfer them across the domain (Mika 2007).

This interdisciplinary paper proposes a functional ontology of brand messaging domain. The goal of this article is to present the broad knowledge about communication message in social media and to propose the brand message in structured form.

The academic article is formed by systematic, comparative and logical scientific literature analysis, which will give better understanding of brand message in social media construct.

The structure of the remaining parts of the paper is as follows. Section 2 discusses the related brand message construct formation for communication in social media. Section 3 presents the analysis of ontologies related to communication message in social media for brand trust and reputation building. Section 4 describes development of brand message in social media ontology. Finally, section 5 presents conclusions.

2. Brand Message Construct Formation for Communication in Social Media

Brands seek to be near consumers, therefore they seek to embody long lasting relationships with consumers which can help to build trust and strengthen the brand reputation. Accordingly brands have to understand the specifics of social media and communication in this new channel with consumers and through daily efforts to strengthen the reputations of brands.

Social media is defined as Web 2.0 technologies and network environment, which provides consumers with possibilities to create content: without rules, free published in public pages, free accessible, without commercial content (Kaplan and Haenlein 2010; Mangold and Faulds 2009; Henderson and Bowley 2010; Safko and Brake 2009; Pendleton *et. al* 2012, Zailskaitė-Jakštė and Kuvykaitė 2011, Wunsch-Vincent and Vickery 2006). Social media includes communication channels such as social networks, blogs, podcasts, vidcasts, forums, online virtual worlds microblogs, mashups, wikis, and others.

Kietzmann *et al.* (2011) paid attention to particularities of social media and defined seven functional blocks: identity, conversations, sharing, presence, relationships, reputation and groups. Identity emphasizes the way how consumers reveal themselves in social media. Conversations describe how users communicate and express themselves. Sharing reveals the rate of content exchange process between different users. Presence describes the reachability of users in social media. Relationships characterize the ties between the users. Reputation is the measure of identifying themselves in the community. Groups are organized communities within social network. These functional blocks may help brands to understand better how to communicate with consumers in social media.

Ghodeswar (2008) proposed the PCDL Model for brand building which has four elements: positioning the brand, communicating the brand message, delivering the brand performance, and leveraging the brand equity. Positioning the brand is related with creating the perception of a brand in the customer's mind and of achieving differentiation that it stands apart from competitors' brands/offerings and that it meets the consumer's needs/expectations. Communicating the brand message is using advertising, direct marketing, sales promotion, sponsorships, endorsements, and public relations in various types of media aiming to establish an emotional relationship with customers. Delivering performance is keeping brand loyalty and customer retention. Leveraging the brand equity is linking the brands to some other entities that creates a new set of associations from the brand to the entity as well as affect existing brand associations.

Understanding and assessment of the characteristics of a message posted in social media is a key for effectiveness of marketing and communication strategies. Though comprehensive studies of a message construct are lacking, general recommendations for the communication process in social media are defined as selection of right channels and fortunate timing for communication with the target consumers (Kaplan and Haenlein 2010) as well as clear message without interpretation (Daft and Lengel, 1986), enhancing trust (Burmann *et al.* 2009) and encouraging participation (Henderson and Bowley 2010; Grunig 2009; Kitchen and Panopoulos 2010).

The scholars pay a lot of attention to a viral message. Helm (2000); Banna (2000); Dobele *et al.* (2007) define the key elements: brand / product, celebrity, the way of life, culture, and innovative idea as one of the most important elements which are necessary for a message that can be spread as a virus among the consumers. They emphasize the importance of emotions as well.

Emotions are one of the essential factors stimulating message sharing (Berger and Milkman, 2010), foreseeing of consumers' behavior and evaluation of future sentiments (De Choudhury *et al.* 2013). According to Dobele *et al.* (2005), it is not enough just to use emotions for shearing of messages, the message should „catch" imagination, adopted to the target audiences i. e. the content of a message should be appropriate.

While analyzing communication process in social media the scholars highlight message tone and style (De Choudhury *et al.* 2013; Denef *et al.* 2013), post frequency (Kietzman *et al.* 2011), addressing (Denef *et al.* 2013), audio, visual and text signals, and links (Adjei *et al.* 2012).

Based on the *uses and gratifications theory* the users are motivated to get involved by the platforms that have no technical restrictions on the post length and provide the users with more tools like colours, emotions, references enabling them to express themselves (Adjei *et al.* 2012). Furthermore, posting frequency should be cogitated as another important aspect. Numerous messages within a short period of time can be considered as spamming, on the other hand rarely posted messages will not engage consumers in communication process and the messages will have less impact. The best posting time for a message can be determined by observing engagement and participation of target consumers, which are in right channels.

Summarizing recent studies of message construct formation in social media, it can be highlighted that attractive message construct embodies content variables (tone, topic, visual and audio aids, keywords, manner, encouragement, addressing, URL) and posting characteristics (channels, appropriate consumers, timing, frequency, and message length).

Appropriate message for appropriate consumers may help to build brands trust and reputation.

3. Analysis of Related Domains and Ontologies

Understanding of communication in social media for brand trust and reputation requires formal representation of concepts and their relationships in the Semantic Web (Berners-Lee *et al.* 2001) domain. Such formal representation is known as ontology, and is most commonly described using OWL (McGuinness and van Harmelen 2004), a *de facto* standard language for describing ontologies.

The advantage of ontology is that ontologies as engineering artifacts allows us to objectify them domain concepts, separate them from their original social context of creation and transfer them across the domains (Mika 2007).

Previous efforts in formalizing the domain of social networking and communication include Social Media Application Ontology (Tserpes *et al.* 2012), Semantically-Interlinked Online Communities Core Ontology (Bojārs *et al.* 2010), Ontology of Trust (Viljanen 2005) and Functional Ontology of Reputation (Casare and Sichman 2005), which are analyzed in detail below.

3.1 Social Media Application Ontology

Conceptually, Social Media Application Ontology SocIoS (Tserpes *et al.* 2012), describes a social network, in which people are socially connected to each other and the basic social interaction is the sharing of content (text, visual and audio).

SocIoS formally describes the relationship between the concepts of User, Activity, Group, Multimedia item, Event, Location, Reliability and Message (see Figure 1).
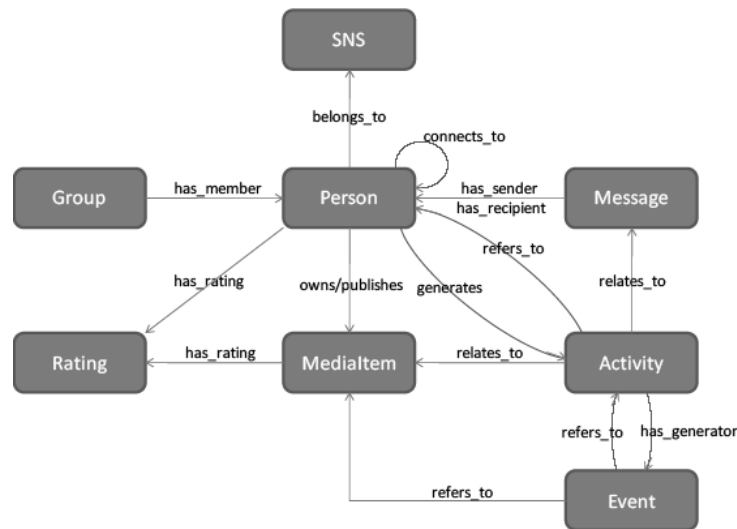
Figure 1. Simplified SocIOS ontology (Tserpes *et al.* 2012)

3.2 Semantically-Interlinked Online Communities

Another relevant approach is the Semantically-Interlinked Online Communities (SIOC) Core Ontology (Bojārs 2010) which provides the main concepts and properties required to describe information from online communities (e.g., message boards, wikis, weblogs, etc.) on the Semantic Web. The main concepts in the SIOC ontology are Users, which create content Items (e.g., Posts) that reside in Containers (e.g., Posts in Forums) on Data Spaces (e.g. Sites) (see Figure 2). Site is the location of an online community or set of communities. Forum is a channel or discussion area on which posts are made. A forum can be linked to the site that hosts it. Event is a virtual or real-world event with a single or multiple participants. Group is a set of members or users of a community site who have a common role, purpose or interest.

Using SIOC ontology one can formally describe relationships between various types of content items that people are creating, annotating and talking about on Web 2.0 platforms.
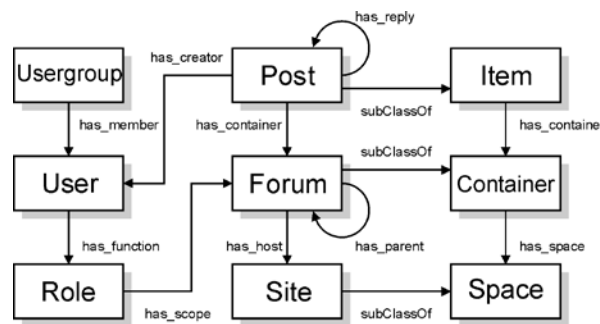

Figure 2: Main classes and properties in SIOC Ontology (Bojārs et al. 2010)

3.3 Trust Ontology

In modern businesses, where different organizations with differing infrastructure must co-operate to utilize networked services, trust is of crucial importance. In fact, trust is a fundamental factor when people are interacting with each other (Viljanen 2005). When searching information, people choose information sources and make trust judgments about these sources based on a range of trust factors such as the expertise of the source in relevant fields (Heath *et al.* 2006).

According to Viljanen (2005), factors of trust are as follows: identity of actors, trusted action, business value (the financial implications of trust in terms of potential loss or benefit), competence of the trustee, capability of access, confidence (belief in the trustee), context (such as time or business collaboration setting), history of past experiences (track record), expertise (formal qualifications), experience: (history of successful actions without extensive expertise), impartiality, affinity (common characteristics such as shared tastes, standards,

viewpoints, interests, or expectations), and opinion of third parties. Such factors and their complex relations can be described by trust ontology that enables systems to share trust relationship information and information on how this trust relationship has been formed.

Chaudhuri and Holbrook (2001) define brand trust as "the willingness of the average consumer to rely on the ability of the brand to perform its stated function." Trust plays a crucial role in decreasing the uncertainty and the lack of information, and it makes customers feel comfortable with their trusted brand (Doney and Cannon 1997). Therefore brand trust has a mediating role in translating the effects of brand community into brand loyalty (Laroche *et al.* 2013).

Several studies consider trust to be an important antecedent of long-term relationship commitment (Doney and Cannon 1997), while commitment is defined as an enduring desire to sustain a valued relationship (Moorman *et al.* 1992). It plays a very important role in the formation of consumer loyalty and behavioral intention (Garbarino and Johnson 1999).

Examples of relevant trust ontologies are the Hoonoh Ontology, which provides a vocabulary with which to represent computed trust metrics relevant to word of mouth information seeking (Heath and Motta 2008). See a fragment of Hoonah ontology in Figure 3, which describes an expertise relationship between a person and a Topic.
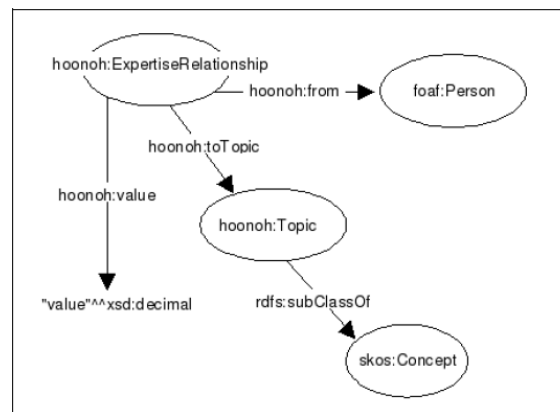
Figure 3. A fragment of Hoonah ontology (Heath and Motta, 2008)

Another ontology of trust has been described by Viljanen (2005) (see Figure 4). It specifies the factors of trust influencing the relationship between Trustor and Trustee.

3.4 Reputation

Reputation is a distributed, social, and collective belief of the community towards a single person, group, or role within the system of beliefs of that community. The concept of reputation has been applied to many different applications such as electronic market places, P2P systems, and information sharing communities. It has been widely accepted that reputation is a context dependent value. Therefore, reputation can be only formalized based on the underlying principles and values of a specific context (Bagheri and Ghorbani 2006).

Carter et al have formalized reputation in an information sharing multi-agent environment in which agents attempt to exchange information with each other in the hope of satisfying the users' requests. Users' reputation is therefore calculated based on the degree of their collaboration in different social roles such as Social information provider (frequency a user's contribution), Interactivity Role (regularity of interaction), Content Provider Role (relevancy to the user's domain of expertise), Administrative Feedback Role (provision of feedback on shared information), and Longevity Role (maintenance of a constant reputation).
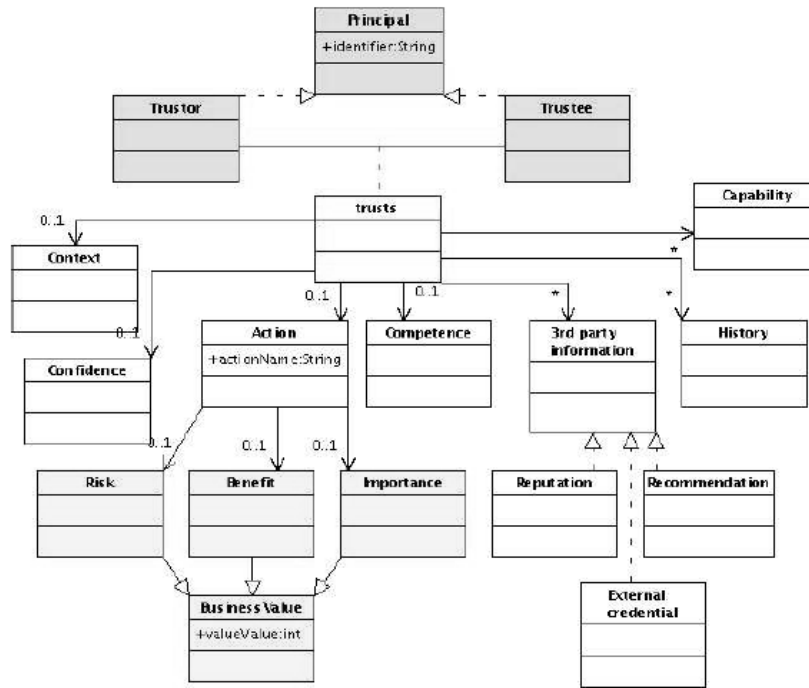
Figure 4. Ontology of Trust (according to Viljanen (2005))

Bagheri and Ghorbani (2006) defined reputation as a multifaceted socially ascribed value which is implicitly defined by nine different constituent elements: 1) Role Fulfilment (RF), 2) Relationship (RS), 3) Knowledge (K), 4) Experience (E), 5) Credential (CL), 6) Competence (CM), 7) Honesty (H), 8) Favourability (FV), 9) Faith (FT). Then reputation can be defined as a 9-Tuple: R = (RF, RS, K, E, CL, CM, H, FV, FT).

According to Conte and Paolucci (2002), reputation involves four distinct sets of agents: the evaluators, the targets, the beneficiaries, and the propagators. Evaluators develop an evaluation or an evaluative belief about others as an effect of their social interactions and perceptions. Target entities play the role of the evaluation object. Beneficiaries are individuals, groups, or organizations for which the evaluation of the target brings some benefit. Propagators are entities, which can transmit reputation information about a target to another entity.

An example of relevant ontology in the domain of social brand messaging is the Functional Ontology of Reputation (FOR) (Casare and Sichman 2005). FOR contains four main categories: Reputative Knowledge, Responsibility Knowledge, Normative Knowledge and World Knowledge. Common Knowledge represents the concepts related to the common sense such as the time concept and Information source. Reputational Entities represent all things that are able to play at least one reputative role and then take part in a reputation process, such as individuals (agents or human being), group of individuals, objects and services. Reputative Knowledge describes the reputational entity reward (good reputation) or penalty (bad reputation), according to its behaviour. Reputation Role concept represents those roles played by entities involved in reputative processes, such as reputation evaluation and reputation propagation. Reputation Nature concept distinguishes reputation according to the nature of a reputational entity, while Reputation Type concept distinguishes a reputation according to information source used in its formation. Responsibility Knowledge associates a cause to a specific behaviour, in order to define whether the reputational entity must be considered responsible for this behaviour or, instead, there are circumstances that attenuate and restrict its responsibility. Normative Knowledge prescribes the agent behaviour, through the description of the social norms, and Normative Status represents a normative classification of the actual behaviour of an agent, after comparison with social norms. Finally, World Knowledge provides a model of social world which is used by the other categories in order to encapsulate common sense notions.

Similar ontologies the Cognitive Reputation Model proposed by Conte and Paolucci (2002), and the Typology of Reputation proposed by Mui et al. (2002)

In this part we presented ontologies related with social media application, trust, reputation and semantically-interlinked online communities. In the next part the Brand Message Ontology in Social Media will be presented.

4. Development of Brand Message Ontology in Social Media

Brands are closely related to trust and reputation. While brand relates a company or a product with the emotional and functional experience of users, reputation provides interpretation of experience over time and trust is earned through consistent brand experiences.

Usually ontologies are developed based on already existing upper level or domain ontologies. We develop this ontology as an extension of SIOC and SocIoS ontologies, as well as related ontologies of trust and reputation. These ontologies do not focus on the content and impact of message delivered through social networks. Therefore, a specific ontology of brand messaging domain is needed.

We have implemented the proposed Ontology of Brand Messaging in OWL (Web Ontology Language) DL (McGuinness and van Harmelen 2004) language using Protégé as ontology modelling environment. OWL DL ontology consists of class, properties and individuals. Classes, interpreted as sets of individuals, are defined using formal description that states the requirements for membership of a class. Classes can be organized into taxonomical hierarchy. Individuals represent objects in the domain, while properties are relations that link two individuals.

The main concepts of Brand Messaging Ontology (BMO) are summarized in Table 1. The current version of the BMO ontology has 32 classes, 30 object properties, 16 individuals, and 62 logical axioms.

Table 1. Main concepts of Brand Message Ontology in Social Media

Content characteristics		Explanation
Tone	Emotions / sentiment	Positive, negative, neutral
Topics	Relevant topics	Adapted for target audience
Key words	Engaging key words	Each sector has different keywords which attract most attention and engagement
Visual and audio content	Photos	Single photos / albums
	Video content	Links to video sharing sites
	Audio content	Links to audio records
Style	Formal	Written language
	Informal	Slang
Promotion	Share (viral)	Brand, trademark, celebrity, lifestyle or culture, innovative idea
	Reply	Question, salutation, call
Addressee	General	Message addressed indirectly
	Direct	Message addressed directly
Link	Interactivity	Interactive link increases value of message
Message distribution		
Channels	Appropriate channels	Channels selected by suitable users
Users	Appropriate users	Current or potential users of product or service
Time	Time of message	Time when users are most active
Frequency	Number of messages per time period	Controlled by company or user
Day of week	Day when message was written	Day when message gets the largest audience
Length of message	Number of symbols	Message length in different social media platforms varies

Finally, the simplified graphical view of the Brand Message Ontology in Social Media is presented in Figure 5.

Figure 5. Simplified graphical view of the Brand Message Ontology in Social Media

The ontology was validated both syntactically using RDF (Resource Description Framework) validator (http://rdfabout.com/demo/validator/validate.xpd) and Manchester OWL validator (http://mowl-power.cs.man.ac.uk:8080/validator/) as well as semantically using Pellet Integrity Constraints validator.

The Brand Message Ontology in Social Media was developed as an extension of SIOC and SocIoS ontologies, as well as related ontologies of trust and reputation.

5. Conclusion

This article presents the broad knowledge about communication message in social media and gives us the understanding of brand message construct in structured form.

Brands seek to be near consumers and to get long lasting relationships in order to strengthen their positions in the market through trust building and formation of positive reputation. Therefore brands have to understand the specifics of communication in social media which involve content variables (tone, topic, visual and audio aids, keywords, manner, encouragement, addressing, URL) and posting characteristics (channels, appropriate consumers, timing, frequency, and message length).

In this paper we have presented the Brand Messaging Ontology for describing concepts and relationships between elements of message as well as related concepts of trust and reputation in the context of social branding. The ontology itself has been developed based on empirical research in the field and as such provides a domain model with high ecological validity. The ontology provides the means to model a number of other relationships that are highly relevant to applications and services in this domain.

Future work will focus on the enrichment of ontology with individuals as well as on the development of social application based on the proposed ontology.

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The Antecedents of Social Media Adoption

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Abstract: The emergence and widespread of social media adoption has been influenced by consumers' unique needs and motivations to use the media. By having a better understanding of the drivers that lead to social media adoption, marketers could exploit the market opportunities within social media. In order to understand these drivers in greater detail, this research is designed to investigate on how social media needs and motivations affect the perceived innovation characteristics and adoption behaviour amongst social media users. The two well-known theories of Media Uses and Gratifications and Rogers' Characteristics of Innovation are reviewed and extended to explain these needs and motivations. Three independent constructs based on earlier research on Media Uses and Gratifications, were employed to examine the media needs antecedent (i.e. personal, social and tension release needs) towards social media adoption. This study also hypothesised that innovation characteristics mediate the relationship between the media needs and adoption. This research design is structured in two phases where phase one involved qualitative approach with 48 participants from six Focus Group Discussions (FGDs) and phase two involved quantitative approach through Online Survey Questionnaires with 428 respondents. The study used social media users from Malaysia as samples. Partial Least Squares (PLS) technique is applied to test the research model. The overall result of the structural model supports the relationship between media needs, innovation characteristics and adoption. The study has revealed new insights into how marketers can use the proposed research model to drive business via social media. The research makes significant contributions to theory and practice for future direction of social media marketing and research.

Keywords: Social Media Adoption, Consumer Behaviour, Media Uses & Gratifications Theory (UGT), Rogers' Characteristics of Innovation (IC), Partial Least Squares (PLS)

1. Background

The widespread global usage of Internet media has had a tremendous influence on the social interaction between individuals, the community and the society. Based on the statistics released by Internet World Stats in 2012, the number of global Internet users amounted to 2,405,518,376 worldwide, which shows an increment of 544% since 2000 (Internet World Stats 2012). Of these, one billion Internet users actively used Facebook, 800 million used YouTube, 343 million used Google+ and 200 million used Twitter and LinkedIn each month (Pick 2013). These numbers position social media as the most engaging online social sites worldwide (Radwanick 2011), which depicts phenomenal changes in media consumption patterns (Mangold & Faulds 2009).

One of the prominent media theories relating to social and psychological needs that motivates users to adopt the media is the Media Uses and Gratifications Theory (UGT) (Blumler, 1979). UGT suggests various understandings of media needs and motivation; for instance, media is used to satisfy immediate and deferred gratification, as an informational and educational resource, for fantasy and escapism, and also as a means to connect or disconnect from reality (Diddi & La Rose, 2006). UGT redefines how and why the individual uses media; explains the motivational needs that motivate the user to select media, media channel, media content; and also describes the subsequent attitudinal and behavioral effects (Ruggiero, 2000; Lee & Ma, 2012). UGT assumes that users are goal-directed in their behavior and are aware of their needs. The closest past studies that can be used to understand the needs for social media adoption are by Quan-Haase and Young (2010) and Lee and Cho (2011) who studied media needs for the Internet or Internet-based media.

Besides media uses and gratifications, the innovation characteristics of social media also serve as an important influence over the consumer adoption decision. Being built based on Internet technology, social media has emerged as one of the most influential innovative media in the twenty-first century (Lee & Ma, 2012). Rogers (2003) proposed five characteristics of innovation (IC) that must be taken into consideration when studying consumer adoption decision. Studies on technology innovation classify innovations according to three schemata: (i) newness/innovativeness, (ii) area of focus, and (iii) innovation attribute, which are considered to be the core concepts and constructs in innovation research (Garcia & Calantone 2002). In view of the different ways in which innovation is acquired, Adams, Tranfield, and Denyer (2011) emphasize that between these schemata, the newness or innovativeness construct is widely used in much of the innovation research. The

understanding of newness or innovativeness helps to develop the dynamics of the innovation process and innovation performance (Garcia & Calantone, 2002). Rogers (2003) proposes a five factor framework to explain the attributes of innovation. Subsequent studies on IC have replicated (Lee, 2004), modified (Agarwal & Prasad 1997) and extended (Moore & Benbasat, 1991; Kearns, 1992) this framework and have provided empirical support for the assertion.

Putting the element of media needs and motivation into perspective, this study integrates UGT and Rogers' IC to examine the antecedents of social media adoption. We attempt to address this phenomenon by extending the prior work of UGT which will explain users' needs and motivation, as well as incorporating users' perceived innovation characteristics to further understand social media users adoption decision-making, which are both presumed to hasten the process. This research is of the utmost importance both academically and practically to fill the gaps in the current understanding of the social media predictive needs and its relation to the adoption behavior.

2. Methodology

This study adopts multi-method strategy. Mixed methods approach is used to highlight some aspects of research that allows to derive: (i) confident results, (ii) uncover the unexpected dimension of a phenomenon where different viewpoints are likely to produce elements that do not fit a theory, thus old theories are re-fashioned and (iv) lead to an integration of theories that brings diverse theories to bear on a common problem (Creswell & Tashakkori 2007).

Through qualitative approach, Focus Group Discussion (FGD) was conducted concerning individuals' experiences with social media. The convenience sampling approach was employed to recruit participants with a heterogeneous distribution of age and gender (Minichiello et al. 1990; Bryman & Bell 2007). The aim of the FGD was to discover new information from individuals in respect of social media experience. It involved pre-testing, pilot testing and actual FGD with 48 participants. Open-ended questions were designed to address affective and cognitive responses towards adopting social media. The FGD results confirm the latent variable proposed.

Through quantitative approach, this study employed online survey for the data collection process. The respondents, who consist of Malaysian social media users, were picked through stratified sampling, which was then further sampled using simple random sampling. The total number of respondents was 428. The questionnaire was pre-tested and pilot-tested on 20 and 100 respondents, respectively. Cronbach's alpha statistic was used to assess the reliability of the scales while exploratory factor analysis with Varimax rotation was used to check the construct (discriminant and convergent) validity of the scales as suggested by Churchill (1979). Some minor adjustments to the wording and layout of the questionnaire were made on the actual online survey. The constructs were measured using a 5-point Likert scale. Table 1 summarises the constructs, measurement variables and sources.

To analyse the data, Partial Least Squares (PLS) was employed to run hypothesis testing, structural equation modelling and mediation effect testing. PLS is a general technique for estimating path models involving latent constructs, which is indirectly observed by multiple indicators. PLS has also been chosen because it is ideal for the early stages of theory development (Hair et al. 2013), as in the case of this research, UGT and IC were merged and extended to develop a research model in social media setting. The PLS results were interpreted in two stages – by assessment of the measurement model and by assessment of the structural model.

3. Results

3.1 The Profile and Social Media Usage Pattern

Table 2 summarises the descriptive results that contain the category of responses and the percentages of the total respondents. These results also suggest the profile and usage pattern of social media users in Malaysia. Demographically, most social media users are female, aged between 25 and 34 years old, with higher educational level, and come from the West Coast of Malaysia. They constitute young couples including professionals and white collar workers whose annual income ranges from MYR24,000 to MYR48,000. They have used social media for about four to six years and log in several times a day. Their average time of use is less than 1 hour a day and they are very active in their social media activities.

Table 1: Construct, Measurement Variables & Sources

Construct	Measurement Variables	Sources
Personal Needs (PERSONAL)	Trendiness	Chryssochoidis & Wong (2000), Van Rijnsoever & Donders (2009)
	Enjoyment	Lin et al. (2008)
	Entertainment	Chen et al. (2002), Dholakia et al. (2004)
	Interactivity	Song & Zinkhan (2008)
Social Needs (SOCIAL)	Social Influence	Venkatesh et al. (2003), Dholakia et al. (2004)
	Social Interaction	Sun et al. (2008), Haridakis & Hanson (2009)
Tension Release Needs (TENSION)	Companionship	Dholakia et al. (2004), Foster et al. (2010)
	Belongingness	Lee & Robbins (1995)
	Playfulness	Lin et al. (2005), Sledgianowski & Kulviwat (2009)
	Escapism	Parker & Plank (2000)
Innovation Characteristics (INNO)	Relative Advantage	Moore & Benbasat (1991), Rogers (2003), Van Ittersum & Feinberg (2010)
	Compatibility	
	Complexity	
	Trialability	
	Observability	
Adoption (ADOPT)		Srinivasan et al. (2002)

Table 2: Profile and Patterns of Social Media Usage

	Percentage		Percentage
By gender		**Usage**	
Male	40.7	<3 months ago	3.5
Female	**59.3**	3-6 months ago	1.9
By Age		7-12 months ago	2.8
Below 20 years old	3.0	1-3 years ago	33.9
20-24 years old	12.4	4-6 years ago	**35.5**
25-34 years old	**55.1**	7-9 years ago	22.4
35-44 years old	29.0	**Frequency of Usage**	
45-54 years old	0.5	Never log off	11.0
By marital status		Several times a day	**57.5**
Single	**47.0**	Once a day	17.5
Married with children	39.5	Once a week	3.7
Married without children	13.1	2-3 times a week	7.2
Divorced/Widow	0.5	2-3 times a month	3.0
By Employment		**Average Length of Use (Weekly)**	
Professional	12.9	< 1hour	**35.3**
Manager	11.4	1-2 hours	30.1
Executive/Administrator	**25.2**	2-3 hours	12.1
Sales Personnel/Supervisor	7.9	3-4 hours	6.5
Teacher/Trainer	7.7	4-5 hours	5.8
Businessman	4.2	> 5 hours	10.0
Clerical/Production	3.3	**Social Media Activities**	
Technician	1.9	Inactive	1.9
Housewife	1.2	Rarely active	0.9
Student	22.7	Sometimes active	11.9
Others	1.6	Active	36.0
By Income		Very active	**49.3**
Less than RM2,000	24.5	**Device Used for Logged In**	
RM2,001-RM4,000	**45.3**	Personal Computer	21.7
RM4,001-RM6,000	20.3	Laptop	**35.7**
RM6,001-RM8,000	5.8	Mobile Phone	13.1
RM8,001-RM10,000	2.8	Smart Phone	19.6
More than RM10,000	1.2	iPad or Tablet	9.4

3.2 Measurement Model

The *reliability* of the construct measurement was evaluated by examining the composite reliability and Cronbach's alpha. Each construct was examined against the recommended threshold values of the reliability. All constructs exhibited composite reliability and a Cronbach's alpha (α) greater than the acceptable level of 0.70 indicating satisfactory reliability (Hair et al. 2013), as depicted in Table 3.

Table 3: Quality Criteria of the Constructs

Constructs	α	CR	AVE	PERSONAL	SOCIAL	TENSION	INNO	ADOPT
PERSONAL	0.958	0.962	0.605	**0.778**				
SOCIAL	0.876	0.900	0.502	0.322	**0.708**			
TENSION	0.923	0.934	0.504	0.436	0.707	**0.710**		
INNO	0.901	0.918	0.508	0.407	0.536	0.701	**0.713**	
ADOPT	0.915	0.931	0.630	0.425	0.484	0.582	0.708	**0.794**

Note: Bold diagonal elements are the square roots of AVE. Off diagonal elements are the correlations between constructs

Convergent validity was confirmed as the average variance in the manifest variables extracted by the constructs (AVE), which was at least 0.502 indicates more variance was explained than unexplained in the variables associated with a given construct (Fornell & Larcker 1981). Convergent validity is established with composite reliability > 0.70 (>0.900) and AVE >0.50 (>0.502) (Gefen et al. 2000).

Discriminant validity is exhibited when the square root of AVE is greater than the off-diagonal elements of a correlation matrix (Fornell & Larcker 1981). Table 3 shows that all constructs satisfy this criterion and demonstrate adequate convergent and discriminant validity. Overall, these measurement results are satisfactory which mean it is appropriate to proceed for the evaluation of the structural model.

3.3 Structural Model

Table 4 reports the standardized parameters for the research model, which are obtained by bootstrap simulation (Chin 1998). *t*-Values confirm the significance of five hypotheses where two hypotheses are found insignificant. The structural model demonstrates predictive power as the variance explained (R^2) in the key endogenous constructs as 0.0541 for INNO and 0.534 for ADOPT. The results show that the research model explains a large part of the variance in the endogenous variables, with an average R^2 of 0.538 (Hair et al. 2013), which indicates that the exploratory power of the model is high.

Table 4: Summary of Hypotheses Testing Results

Relationship	Mean	SD	SE	t-value	Path Coefficients	Empirical Conclusions
PERSONAL → INNO	0.112	0.038	0.038	2.883*	0.109	Supported
SOCIAL → INNO	0.041	0.06	0.06	0.632	0.038	Not Supported
TENSION → INNO	0.654	0.067	0.067	9.726*	0.654	Supported
INNO → ADOPT	0.575	0.058	0.058	9.809*	0.571	Supported
PERSONAL → ADOPT	0.148	0.037	0.037	3.961*	0.147	Supported
SOCIAL → ADOPT	0.118	0.042	0.042	2.804*	0.117	Supported
TENSION → ADOPT	0.016	0.061	0.061	0.32	0.020	Not Supported

Note: SD – Standard Deviation; SE – Standard Error
* Significant if > 1.96 for two-tailed test

The communality and redundancy coefficients are also presented in Table 5, which can be used in the same way as the R^2. An important part of the model evaluation is the examination of fit indexes reflecting the predictive power of the estimated inner and outer model relationships. The goodness-of-fit (GoF) is meant as an index for validating the PLS globally. A general criterion for evaluating GoF is to calculate the geometric mean of the average communality and the average R^2. The result shows GoF = √ [(0.538) x (0.550)] = 0.544, which considered as satisfactory (Tenenhaus et al. 2005).

The blindfolding approach proposed by (Wold 1981) was followed to calculate the CV-Communality and CV-Redundancy indexes. The CV-Communality index (H^2) measures the quality of the measurement model

whereas the CV-Redundancy index measures the quality of the structural model. As shown in Table 4, the measurement model (H^2 = 0.456) shows slightly less quality than the structural model one (F^2=0.300).

Table 5: Communality, Redundancy and Goodness-of-Fit

Construct	R^2	H^2	F^2	C*	r*
PERSONAL	-	0.54	-	0.605	-
SOCIAL	-	0.366	-	0.502	-
TENSION	-	0.429	-	0.504	-
INNO	0.541	0.416	0.267	0.508	0.039
ADOPT	0.534	0.529	0.332	0.63	0.065
Average	0.538	**0.456**	**0.300**	0.55	0.052
GoF			**0.544**		

* C – Explain communality coefficients are equal to the squared correlations between manifest variables and their associated latent variables; r – Explain redundancy coefficients reflect the joint predictive power of the inner and outer model relationships

3.4 Testing Mediating of Innovation Characteristics with Alternative Models

To underpin the theoretical assumption of perfect mediation with the empirical results, INNO was tested against the alternative model. We treated the research model as the baseline (Model 3) for testing the direct and indirect path effect. In Model 1, INNO which is the mediator, was excluded and PERSONAL, SOCIAL and TENSION were directly linked to ADOPT. Model 2 includes the indirect path from PERSONAL, SOCIAL and TENSION to ADOPT via INNO. The testing of the mediation procedure followed Baron and Kenny (1986). The results of these comparisons are explained in Table 6.

In a comparison of Models 1 and 3, Model 1 assumes that the relationships of PERSONAL, SOCIAL, and TENSION to ADOPT are significant because the *t*-values of 4.952, 2.611, and 5.964 are deemed > 1.96, the cutoff point for the path to be statistically significant. However, when the Model 2 is compared with the Model 3, Model 2 shows that the indirect path of PERSONAL and TENSION to ADOPT via INNO is statistically significant as the *t*-values of 2.815, 10.381 and 22.495 are > 1.96; which shows that the indirect path of SOCIAL to ADOPT via INNO did not show a significant path with the *t*-value at 0.693 < 1.96. For Model 3, it has the highest PLS global quality, which makes the proposedresearch model the best fit model with full mediation effect. Figure 2 depicts the final structural model with result indicating path coefficients, t-tests and R^2.

Table 6: Parameter of the PLS Model by a Bootstrap Method

Hypothesised Relationship	Model 1		Model 2		Model 3	
	β	t-value	β	t-value	β	t-Value
PERSONAL →INNO	-	-	0.109	2.815*	0.109	2.883*
SOCIAL → INNO	-	-	0.038	0.693	0.038	0.632
TENSION → INNO	-	-	0.655	10.381*	0.654	9.726*
INNO → ADOPT	0.211	4.952*	-	-	0.147	3.961*
PERSONAL → ADOPT	0.144	2.611*	-	-	0.117	2.804*
SOCIAL → ADOPT	0.392	5.964*	-	-	0.020	0.320
TENSION → ADOPT	-	-	0.708	22.495*	0.571	9.809*
R^2	0.39		0.501		0.534	
GoF	0.467		0.536		0.544	

** Significant if > 1.96 for two-tailed test*

4. Discussions & Implications

Based on the presented results, the media needs were confirmed to drive social media adoption, comprising personal needs, social needs and tension release needs (Severin & Tankard, 2010). In agreement with prior research on media needs that lead to the adoption or usage, consumers tend to use social media for these three categories of needs. The results were expected and in agreement with UGT and other media studies (Quan-Haase & Young, 2010; Lee & Cho, 2011), which validates these needs as having an impact on social media adoption.

With regards to the mediation effect, the innovation characteristics were confirmed to mediate two relationships – personal needs and tension release needs – with adoption. The significant relationship explains that innovation characteristics play an important role in helping to enhance the social media adoption rate.

This finding is expected and is supported by Parasuraman (2000), Venkatesh et al. (2003), Kaplan & Haenlein (2010), and Fischer & Reuber (2011).

Figure 2: Final Structural Model
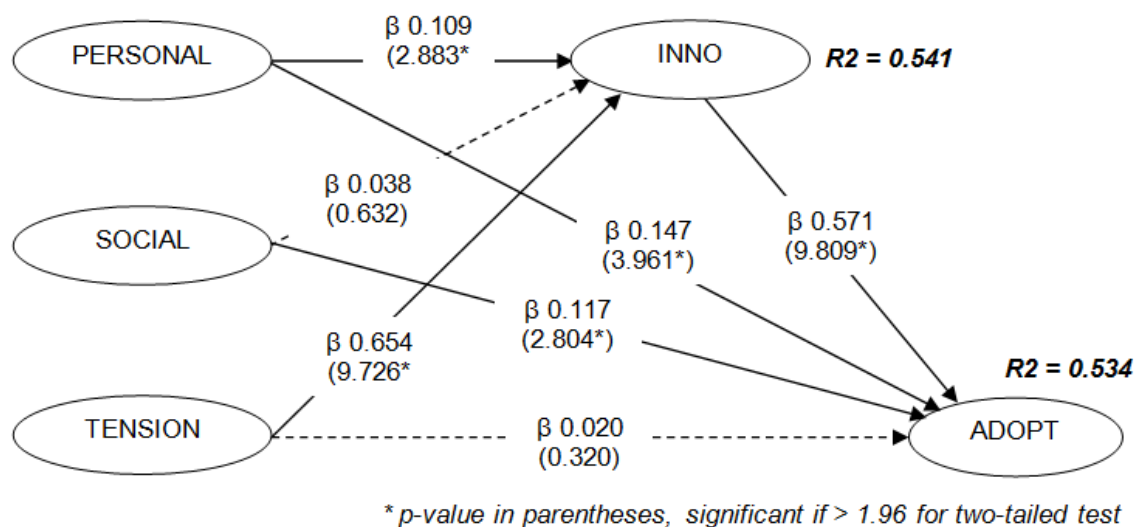
Key:
PERSONAL – *Personal Needs;* SOCIAL – *Social Needs;* TENSION – *Tension Release Needs;* INNO – *Innovation Characteristics;* ADOPT – *Social Media Adoption*

Figure 2: Final Structural Model

Among all hypothesized relationships, two were found insignificant, which confirmed: (i) innovation characteristics to not mediate the relationship between social needs and social media adoption. In particular, it implies the broader impact of social interaction and social influence concerning social media tools and platforms in facilitating the goal of consumers to adopt social media. The results show that only two categories of needs are enhanced by innovation characteristics (personal needs and need to release tension) and (ii) insignificant relationship between tension release needs and adoption explains the variability across social media users concerning the extent to which consumer attitudes correlate with the favorability of affective and cognitive responses towards decision-making to adopt social media. Hence, the social factor, is not in favor of innovation characteristics, which implies that for adoption behavior to take place socially, consumers do not need technology innovation to enhance adoption and usage. Without these mediators, the relationship is still perfectly established.

The present study contributes to research in several ways. This research is one of the first studies drawn from the literature of media and technology to investigate the antecedents of social media adoption. Specifically, this study shows that the UGT and Rogers' IC are theoretically complementary in explaining consumer adoption of social media. Hence, the conceptualization and research model allows the influence of different types of social media uses and gratifications to be explored further. Secondly, the comprehensive yet parsimonious research model makes an important contribution to the emerging literature on social media behavior, by grounding variables and applying them to a new context of social media study based on UGT and Rogers' IC. It furnished detailed knowledge on the antecedents of media needs that are derived from three basic psychographic needs – personal, social and tension release. Thirdly, the innovation characteristics derived from the Diffusion of Innovation Theory by Rogers (2003) found that innovation characteristics play a direct and indirect effect in bridging the felt needs with social media adoption. This implies the importance of innovation characteristics in enhancing the adoption behavior of consumers. As the consumers gain experience with the technology innovation, more considerations emerge and gain significance in determining the adoption behavior. Hence, the relational element of innovation characteristic plays an important role in social media adoption.

The identification of three categories of needs of social media allows marketers to optimize the probability of efficiently addressing social media customers in a proper consumer needs typology based on these three

psychological categories. It provides the potential for a much closer fit between the marketer and heterogeneous social media customer. The nature of social media has dissolved geographical boundaries, bringing businesses and consumers together in a low friction environment; hence, traditional market segmentation is likely to be unsuitable. Therefore, the typology of social media users based on personal, social and tension release needs can be used as an effective psychographic segmentation and targeting instrument. It also contributes to tailor marketing activities to the needs and expectations of customers that basically have different needs. Only through an understanding of the different typology of social media needs will it be possible to develop strategies and tactics to attract and maintain customer relations.

5. Limitations and Suggestions for Future Research

The first limitation concerns the context of the research is that this research is conducted in the Malaysian context, which puts constraints on the generalizability of the results to other countries. The general applicability of the findings for the global consumer is limited due to the fact that usage and patterns were influenced by local culture, status and lifestyle. Future research should address cultural differences by further examining the cross-cultural issues. Also, for future research, longitudinal study would provide the inferences of cause and effect.

In summary, the overall results have contributed to the understanding of the interplay between individual motivation, which involves media needs and innovation characteristics in social media adoption. Through this study, both media needs and innovation characteristics have been found to have either direct or indirect effects on social media adoption. This approach would be of academic and practical use to understand consumer behavior related to social media.

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PhD Research Papers

Youth's Political Participation In Pakistan: Current Behaviour and Emerging Trends

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Abstract: New electronic media have tremendously reshaped traditional modes of education, infotainment and communication. Youth is accepting electronic media at very high rates, such that nowadays youth can be pronounced as NET- NATIVES based upon the vast acceptability of social media. An unstable socio-economic position, unhealthy democratic system and a low rate of civic engagement in Pakistan raises the need to re-examine the social capital situation in the state and suggest some solutions for this unstable situation. In Pakistan, more than 20% of the population belongs to the 18 to 24 age group with low social capital. The aim of the paper is to discover the impact of political parties' initiatives to be present in cyberspace and to what extent youth is engaged with them. A multi stage research process will be conducted where quantitative and qualitative data will be collected enabling analysis of the situation to be formed and discussed. The purpose of the focus of this paper is to understand perspectives on youth's perception about the current state of democracy, political parties in the state and the level of youth's participation in the country's politics by using 'Social Networking Sites' (SNS) and other available platforms over the Web. The findings in the current paper conclude that youth in Pakistan is a heterogeneous segment with an active contribution in social capital, specifically in discussions about politics in comparison to the recent history of interest shown by Pakistani youth about politics. Recently the effective use of SNS by a few political parties has successfully focused youth, and motivated them to be active about working for the betterment of the political development of the country. It is also perceived that the educated pool of society can have a prominent role to play in the future of politics in the country.

Keywords: Political participation, Social Networking Sites (SNS), Youth, Techno Culture, Social Networking and Politics, Social Media, Pakistan

1. Introduction

Every political system comprises some values, norms and ethics which all political parties follow (Mughees and Naseem 2011a). Since the birth of Pakistan, non-political forces in the form of bureaucracy, military and religious groups have always interrupted the political processes and functions (Mughees 2009). However it is interesting to observe that religious political groups always fail to influence the public polling (ICG 2002). Since 1973, democracy in Pakistan has included 8 election terms and 2 different political systems (Parliamentarian and semi-presidential) (Irum and Sieg 2009). Both political systems revolve around power shifts between the president and prime minister of the state (Irum and Sieg 2009). In the past, there were only 2 political parties which succeeded in registering their presence with a majority: The 'Pakistan People's Party (PPP) and the 'Pakistan Muslim League' (PML) (ICG 2002). However, interestingly in the recent 2013 election, a new party (named: Pakistan Tehreek-i-Insaf (PTI)) marked its presence but failed to hold any strategic position.

It is important to understanding the political situation in Pakistan, that individuals understand some rigid characteristics of the existing political culture which obstruct the enactment of the democratic system in Pakistan. Some basic characteristics are the following: (1) The caste system in Pakistan society is directing the political system. Even in the smallest socio-cultural unit, an individual's political preference has its influence (Mughees and Naseem 2011a). (2) Elite society and castes are availing more comforts as compared to the lower classes; lower classes in society always try to get rid of the negative influence of the elite classes (Mughees and Naseem 2011b). (3) Currently, no political party has brought an agenda with revolutionary change to target a citizen's basic requirements (Rodney 2001). (4) The political groups are enriched with nepotism where only a few families have established control (Heinrich 2009).

Socio-economic instability in the country, developing challenges and controversies (i.e. poverty, inequality and injustice) are reshaping the future, therefore it will become tough for all political parties to gain a majority (Dri 2011). Freedom of the media is a recent revolution in Pakistan which promotes some serious issues. For example: harassment from establishment or militants in raising social problems; the challengeable quality of

journalism in the country; and personal influence of the political elites over media content and outlets (Marcus 2011).

In order to design any political campaign or to develop the political presence among citizens, it is always important to study the demographic and socio-graphic segments of society, as it makes the synchronization process easier for political parties. By the beginning of 2040, population in Pakistan will bypass Indonesia and Brazil, becoming the 4th most populated country in the world after China, India and the United States of America respectively. At present 68% of the population in Pakistan is below the age of 30 (Haque 2011).

To achieve future success in the political battle of Pakistan, political parties should design resilient youth focused strategies to make a revolutionary change in the ballot boxes. In the year 2011 a series of statistics highlighting concerns were published by the Centre for Civil Education (CCE). The most interesting in the context of this paper are the following: (1) 82% of educated people from age group 18-30 in Pakistan are not involved in politics; (2) 84% of those surveyed believe that the participation of youth can bring change in Pakistan (Haider 2008). Therefore political parties need to understand youth's requirements and formulate their agendas for youth's betterment. The purpose should focus youth interest on involvement in political developments. In order to exploit the potential of the least participating demographic group in Pakistan (youth), all political parties are building their presence over maximum possible platforms where they can interact with youth (Marcus 2011). That is why most of the Pakistani political parties are pushing themselves towards cyberspace to encourage 20M literate citizens to participate in politics. So far, 90% of the political parties in the country have a presence on social media (Zafarullah 2004).

2. Literature Review

2.1 Social networks and Society

Social Networks provide an open opportunity for individuals to build an identity profile, to connect and associate with other people by posting comments, videos and photos. (John and Rosson 2008). These platforms give methods to the people for making groups to interact on the basis of their collective interests (Phulari et al. 2010). Sociologists define the formation of society as an output of interaction among small groups where strong micro level interaction exists and people have relevance and closeness to some extent as compared to the rest of the society. On the other side, weak links formulate macro level interaction and are useful in helping to define civil society. These weak-links are responsible for the following situations. (1) The development of large-scale organised groups. (2) A position where people from different social networks, cultures and thoughts unite to make any impact. i.e. two small groups exchange information and ideas to support/compete together and exchange information in order to support/challenge a cause (Granovetter 1983). This can be defined as a block-modelling mechanism to integrate and bridge different communities (Breiger and Philippa 1978). The goal to improve society can be achieved by encouraging individuals to participate in civic engagement by using weak-links. Civic engagement requires democratic society, decentralised power, law, legislation, and freedom of speech (Adil 2007). From a social capital perspective, active weak-links in society accelerate the rate of resolving collective problems and decrease the cost of social transactions (Putnum 2000). The electronic space in the form of SNS is providing a healthy service to the community in enabling weak links to be formed with regards to political participation and community development through enablement of the virtual society.

2.2 Social Capital and Trust

A lack of trust within any society is the major factor in decreasing social capital, weakening social networks and reducing the rate of civic engagement (John 2003; Adler and Know 2002). From an economist's perspective, a low rate of trust also encourages corruption and poor government bureaucracy (Mathew and Coasta 2002).). In general, most people feel and experience a distinct gap between actual and perceived effectiveness of government policies and agendas Peace, safety, poverty, human rights and inequality in society are major reasons for distrust in civic engagement (United Nations 2008). Trust includes the brightness of hope, confidence to rely on another party, and the characteristics of accountability and transparency (United Nations 2008). In the phase of recreating trust, all stakeholders should be reconnected, especially citizens, and dialogue should be initiated to increase confidence by providing greater transparency (United Nations 2008). For this reason there is a need to find a structured but informal communication channel and SNS can fulfil this need.

2.3 SNS and Youth

Critics argue that SNS are reducing scenarios for traditional public community development (Barry 2001) but researchers like Wellman define such engagement with such services as an opportunity where people can interact with help of ICT and raise the need for a framework to measure public engagement and social capital in the virtual world (Nicole 2010). SNS delivers an inexpensive and affordable opportunity to maintain large scale social networks (Schaefer 2008). It provides a platform for individuals who want to interact and work together for any cause (Homero et al. 2012). For example; the campaign of fund raising for Haiti's earthquake victims (Nicole 2010) and President Barack Obama's election campaign in the USA (Homero et al. 2012). Youth is determined to be the heaviest participant on SNS platforms around the globe, helping to amplify the change in the digitalised society, as SNS have reduced geographical and social barriers to interact (Nichole et al. 2009). In other words, the social capital of youth can play a key role in connection and relationship development in societies (Naim 2011). In every progressive nation, youth holds huge social capital as compared to other demographic groups who may prefer to live in lower risk environments (Naim 2011).

2.4 Political Participation of Youth and Internet

In democracy, citizen participation is defined at two levels, 'narrow' and 'broad'; where narrow means the citizen's participating only in casting votes (Schumpeter 1952), and the broader level means intensive citizen participation in every aspect of politics (Linz 1975). Dalton argues that most successful democracies have large scale citizen participation in decision making creating a sense of political responsibility (Dalton 1988). As youth engages in political conversation, it is their responsibility to develop skills to judge and make decisions on politics. In addition, individuals need to develop their ability to analyse political situations, and create trust in defined political values (Mihelhak 2002). There is not only one single structured way of providing political participation for youth; many informal and less-hierarchal networks can be used to create political participation (Inglehart 1997). While studying youth's participation, it is important to identify their foremost needs, values and behaviour. For example; at present youth are experiencing working environments as an unpredictable and uncertain place that is why the majority of youth are focused on discovering risk free and reduced effort paths to development in the future (Ule and Kuhar 2003). Every citizen learns and listen about politics in school, from family, peers, through popular culture, clubs, associations and other organisations. Sometimes the habit of poor political participation in individuals extends with age (Sinnott and Lyons 2003). Individualisation is a major threat for social networks and political parties where everyone avoids performing flexible and collective tasks (Furlong et al. 2000). The Internet provides a flexible platform for initiating political transformation where a message can be published in different formats (image, sound and text) at very low cost (Marcus 2011). The non-hierarchal nature and network-like architecture of the Internet highlights its importance as a trigger for any social movement (Donk et al. 2004). In the meantime, the effectiveness of the Internet may also be restricted by many resource and skill related factors. For example: the presence of 'Digital Divides' can create an imbalance in society amongst those individuals without the necessary skillset to take advantage or the conditions for citizens to access the Internet country-wide (Norris 2011).

2.5 Aim of the Current Research

The research detailed in this paper focuses on the 20M Internet users in Pakistan, which are mostly youth. It is an effort to discover the impact of the virtual society of SNS on youth in Pakistan and how they use it to increase their participation in Pakistani politics. To be precise, the following are the goals;

- To understand the perception of youth in relation to the existing democratic system and the political parties which are present in Pakistan.
- To uncover the extent to which youth is using SNS to participate in the political system of Pakistan.

3. Methodology

A multi stage study with a multiple data gathering approach is adopted. In the initial phase, basic quantitative research is conducted in different urban areas of the country to identify the level of interest youth have in the current political scenario of Pakistan. The questionnaire includes questions about: the general perception of individuals towards politics; their intention to participate in social networks; the usage of the Web for civic engagement and political participation; and the impact of SNSs on youth's political participation. A Likert scale with the range of 'strongly agree' (1) to 'strongly disagree' (5) was used for all questions. The dataset consists of a total of 220 responses, with a target on youth respondents with a maximum age of 30 years. After discounting

incomplete responses 205 replies were considered for the current study. In the second stage, qualitative data is extracted from SNS where a topic based/keyword based analysis is conducted and further opinion analysis performed in order to capture the basic trends of communication over the Web. Analysing the collected data from both stages, descriptive statistics are applied to discover dominating trends and factors which are influencing youth participation. Secondary data is also used to define and elaborate current findings where needed.

4. Findings and Analysis

The profile of the research sample used in analysis and findings is shown in Table 1 below

Table 1: Profile of surveyed data

Features	Groups sub-division	Response percentage
Region	Urban society	
Age	Under 20	27%
	21-25	37%
	26-30	36%
Gender	Male	40%
	Female	60%
Occupation	Student	17%
	Employed	42%
	Unemployed	41%
Education	Primary	10%
	Secondary	15%
	Intermediate	32%
	Graduate	43%

Initially questions asked related to the current political situation of Pakistan and desired need of change among youth. 45% of respondents expressed their dissatisfaction over current policies of the ruling party. When analysed in detail, the 45% comprises of 75% females and 50% educated beyond intermediate level. While the question asked about the need of change in the current political culture, 42% of the respondents supported the need for revolutionary action. However as a result of lacking social capital in youth, only 55% feel that only minor and incremental changes are possible in the current scenario, which demonstrates their distrust in the future in terms of bringing revolutionary changes and getting them implemented through the present system. Those educated beyond intermediate level and the unemployed in the sample set express their dislike of the current political system by supporting the need for widespread revolution. The employed and those less well educated are more concerned about small, incremental and minor changes in the current political system. Tables 2 and 3illustrate these points below.

Table 2: Dominating trends in the Profile of the dissatisfied youth with the current political system.

Demographic feature	Percentage (%)
Female	75%
Educated and Unemployed / Student	More than 50%
Wish to have some revolutionary change	42%
Politically involve over SNSs	68%

Table 3: Dominating trends in the Profile of the satisfied youth with the current political system

Demographic feature	Percentage (%)
Male	55%
Employed	64%
Wish to have some supportive government policies	72%
Politically involve over SNSs	52%

In Pakistan, the employment rate is always majorly affected by the elections; a high employment rate is only observed during the election year (Irum and Sieg 2009). An emerging trend which has not been highlighted before in the context of Pakistan is the participation of female youth with healthier political understanding and motivation to play their constructive role for the betterment of the society. As a basic responsibility of every citizen, everyone should have an understanding of culture, political parties, and their aims as the basic responsibility (Mihelhak 2002). This understanding triggers the sense and ability to analyse the stance of every political party.

Another interesting finding is the participation and motivation of youth in the previously held election in Pakistan (2013). According to the current survey, more than 35% of the youth were eligible but did not vote in 2008 elections, however, 18% more youth participation is observed in the 2013 elections. This significant rise in participation can be based upon their improved understanding of the importance of the vote as a catalyst for change. Significant change in the behaviour of female youth is also observed, with more than 40% voting in the 2013 elections.

In Pakistan, online platforms have been used earlier for communication, media campaigns, and social awareness. So there usage for an election campaign is not something different. In the current study, the role of the existing and emerging media will also be discussed. In urban society, 75% of those aged 26-30 and 80% of unemployed youth frequently used Internet and specifically SNSs. Besides this, more than 65% of sample surveyed have visited the web space of political candidates over the internet and have plans to participate in politics over the Web in the form of blog / SNS related activities. Most of the sample defined themselves as SNS users for the following purposes as shown in Table 4.

Table 4: Purpose of using SNS among youth in Pakistan

SNS use for	Percentage of youth
Entertainment	82%
Political updates	76%
Socialization	64%
Infotainment	78%

Fluctuation in trust rate is also observed while considering traditional media in Pakistan. 52% of the sample have trust and satisfaction in traditional media. Dissatisfaction with media platforms can be most significantly observed among females and unemployed individuals sampled. 68% of the sample were dissatisfied with traditional media as the news source because of political influence over them. 48% of the sample has a focus on the use of new media platforms such as SNS because of the lack of trust in the traditional ones. Responding about the use of the Internet, 54% use the Internet for prompt updates and information. 42% of the sample also believe that information provided over the Internet is more correct and authentic as compared to traditional media.

From the answers provided regarding the importance of SNS in creating social capital and increasing political participation in Pakistan, 76% of those surveyed mentioned the use of SNS for getting updates and news related to political activities. Furthermore, 47% of the sample stated that they usually express their opinion over SNS. Only 39% used SNS for political debates and discussions. Mixed behaviour is observed between males and females for their involvement in debates, discussions and posting their views over SNS in Pakistan.

The majority of those surveyed highlighted 'corrupt systems and leadership' as the major factor in provoking their interest in political participation. However, other dominating factors are the 'unethical practices during elections', 'lack of justice' and 'poor policy making strategies'.

The following statistics from the past are helpful to contextualise an understanding of the current perspectives of the youth in the country:

▪ In 2007, a study from Centre of Civic Education (CCE) concluded that 82% of the youth is not willing to participate in politics.

▪ In 2013, a study from the British council analysed that only 30% youth believes in democracy.

From the study of qualitative data which was extracted from the SNS for the semantic analysis during the research, an exponential growth of over 200% in year 2013 and 2014 is observed where youth is participating in political discussion and debates as compared to the years 2011 and 2012.
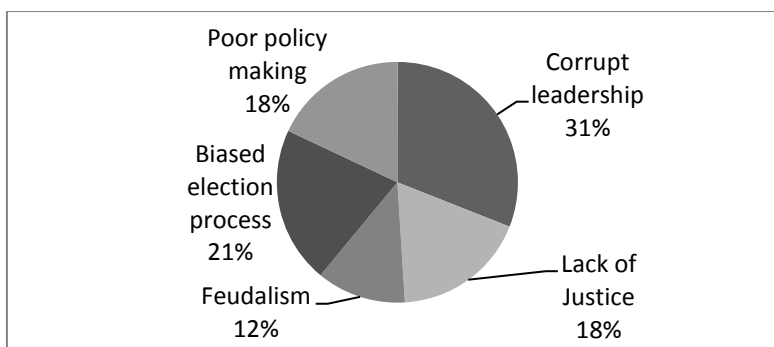
Figure 1: Reasons of political interest

This interest of youth in politics through SNS works as a catalyst for improving political processes, which will trigger change to affect every walk of life and affect the common man within short timescales. Furthermore, this political awareness has already resulted in youth registering their protests against injustice, corruption, and violation of human rights.

Through a qualitative review of the extracted data from the SNSs reviewing the emerging trends from the quantitative section, a few of the findings are as follows:

Youth is the highest participating demographic segment in the political issues across the country, specifically the youth between theage-group of 20-30 years. Those in advance of this age group also have a massive impact on opinion building and initializing political discussions over the SNSs.

The keywords 'lie' and 'corruption' are intensively associative with the ruling government over the SNSs.

Facebook is the leading platform for the most of the population across the country to share political discussions, however 30% of participants also use twitter.

The crawler to grab the posts and comments can only access open profiles within the privacy policies of the SNSs, so the differences within the quantitative and qualitative findings can be as a result of the following reasons.

In Pakistan, most females usually hesitate to disclose identity to participate in open discussions and usually use Facebook with restricted scope.

The youth from the overseas usually discuss political issues in a less aggressive manner. Statistically, only 12% of overseas Pakistanis discussed situations with negative impressions.

Youth from universities and urban areas usually participate more actively as compared to the rest of the country.

The findings suggest that Pakistani youth is engaging more attentively to new developments in country politics. Meanwhile, the aggression and seriousness in their attitude is driven on the basis of symbolic leadership representations (PILDAT, 2003). Supporters of the political parties are more active in using SNS as a platform to defame the opponents. However, productive and efficient use is required to build healthy civil engagement and constructive political participation.

The emerging trend of citizen journalism in Pakistan is enforcing transparency in socio economic and political circumstances. On the other hand, the Pakistani blogosphere is encouraging individuals to use cyberspace to share social, political, information and ideas (Marcus 2011). i.e. 'All things Pakistan' (pakistaniat), 'Pak Tea House' (pakteahouse) and 'Café Pyala' (cafepyala.blogspot). The rate of discussion about politics, policies and potential changes in society is equal among all age groups, which is a healthy sign for increasing social capital in society. In the past, major SNSs in Pakistan faced many issues which made a huge impact over the total number of their consumers, i.e. number of youth users started to avoid Facebook as a protest against uploaded contents disrespecting the Prophet and Islam.

Openness is a core feature which is enabling SNS to be readily adopted, accepted and appreciated. In Pakistan, different social and political activists are using SNS for various purposes. According to participants in the current survey, more than 78% of youth is following any political individual/group. A similar positive behaviour of youth is observed where 68% of them are using SNSs for watching video clips of political events. The percentage of youth using SNS for debates and discussion is also increasing, as most of the sample have begun to participate in debates and discussions over social networks. According to the current survey 24% have just started to

participate in political discussion over the Web within the last 6 months (NOTE: This links to recent elections). In total, 58% of youth sampled in this survey can be deemed to be actively involved participating in politics by using SNS.

5. Conclusion and Further Studies

The current analysis may conclude that use of SNS has shown exceptional growth in Pakistan, and regular discussions on political scenarios has helped them in understanding and analysing political scenarios. As the output of distrust in the political system of the last 2 decades where political parties failed to fulfil promises, this has made youth more frustrated with the current political scenario. In spite of this the evolution of new electronic media has made life easier with information just a few clicks away. The Internet and new media have successfully made traditional media more transparent and active. In Pakistan, many activists, political parties and communities are using online platforms to maximize their existence and growth. The current analysis concludes that increasing involvement of youth is predicted in all civic engagements, social networks and political party conversations in the near future. Specifically about SNS's, youth are using it for socialization, community participation and to expand their network of connections. Youth in Pakistan are heavily engaged with political parties through SNS. To some extent, the political parties can be deemed to be quite successful in engaging youth with them by sharing activities, agendas and continuous media updates. As a future trend, SNS will be a major tool for political parties to establish contacts with citizens at personalize level.

The findings from the current research are predicting dominating trends of youth participation in political participation and civic engagement. It is predicted that: such political engagement will lead to a substantial impact on the ballet boxes within a few years: that political parties will need to address the youth more intensively over SNS. The youth is not a single strategic group across the country; on the basis of demographic attributes each has their own different levels of interest and attention.

The current research is a descriptive study as an attempt to translate the actual ground realities with help to survey findings and secondary data. The current study can be improved by adopting a framework to discover attitudes to trust, political participation and intentions to cast votes in current elections. Social networking sites have made things very unpredictable. Their complex and non-hierarchical nature demands more customisation and personalised attention to generate a successful execution of political campaigns through SNS. Qualitative data analysis can be used to refine the understanding of Pakistani political activities on SNSs.

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Analysis of the Facebook Privacy Settings of Young People With an Emphasis on the Czech Republic and France

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Abstract: This paper aims to examine the difference in the approach to the privacy of the young generation in the Czech Republic and France. We investigate the profiles of 531 Facebook users. The visibility of each profile was recorded in two ways – from the perspective of a friend and from the perspective of a random Facebook user. The main aim is to find in which country the young people are more responsible in approach to the publication of their personal data on the social networking site Facebook, both in relation to their list of friends as well as to the general internet public. We analyze significant differences between the settings of the service of young people in the Czech Republic and France. While the French Facebook users show more effort to protect their information in general, in case of the key items the opposite is true (email, location). Despite of a greater tendency to publish a large number of surveyed items, the Czech users very strictly protect information that makes them identifiable at other levels (phone number, email, location). Differences in the data indicate a different role that the social network plays. In France, the network is more tightly linked with other layers of identity of users. This naturally makes pressure for greater control of the published data. In the Czech Republic, social networks follow more logic of remediation – rather than create a supplement to real identity, it acts as an alternative. Furthermore, we discuss the possible implications in terms of the usability of these data by other entities (e.g. marketing) including possible misuse of available data (e.g. cyberbullying, mobbing, bossing, staffing). In conclusion, we identify the greatest risks based on the analysis and discuss the results with philosophical opinions of M. Foucault and T. W. Adorno.

Keywords: Social media, Facebook, Privacy, France, Czech Republic

1. Introduction

The paper presents two perspectives on privacy in the environment of social networks based on the Internet both from the theoretical and philosophical point of view on the other hand, from a practical research on the social network Facebook carried out among young people (15-30 years) in the Czech Republic and France. The final part aims to synthesize views and discuss the positives and negatives towards the actual phenomena occurring in this environment during social interaction.

Current literature deals with the problematic of privacy on social networks mainly just by using freely available data, i.e. data, that can be reached by some automatic analytic services via Facebook application programming interface. It means that the subject of the research is data that are freely available to the public view. Acquiring of private data is much more difficult. The result is that our general knowledge of the privacy on the social networks is at least incomplete. In contrast to these classical approaches to this issue at the level of processing large amount of freely available data about users within a particular service (Facebook, Twitter, etc.) (Bohmova, Malinova 2013), (Pavlicek, Pechar, 2012) or the use of a questionnaire survey (Debatin et al., 2009), (Ibrahim et al., 2012), we decided focus qualitatively different direction this is why the number of Facebook users involved in our research will be lower. We wondered what differences between the information visible only for friends and those which are available to anyone in the Facebook environment within individual profiles. We have identified several research questions, see the section Aims and methodology, which we discuss in the context of the selected service. This theme is viewed also from the perspective of philosophy, under which points out the issue of privacy in the context of changes in society in the second half of the 20th century, particularly in the context of mass culture and the media. An ethic view on this issue is mentioned e.g. in (Sigmund, 2013). In the polemics T. W. Adorno and M. Foucault we trace patterns or models that can be applied to contemporary issues in privacy associated with the phenomenon of social networking sites on the Internet such as Facebook.

The aim of this paper is to compare the approach of young people to their privacy in two different countries, to discuss the possible implications with regard to usability of these data to other entities (with emphasis on their possible misuse) and to utilize the theoretical viewpoint of philosophy in the context of social media.

2. Philosophical and theoretical background

The phenomenon of the Internet, virtual environments, and social networking in particular not only poses new challenges for our privacy and its protection (Young, Quan-Haase, 2013), but our very notion of privacy is fundamentally transformed in an entirely new perspective. In a sense the hypermedia reality is brought to its pinnacle. This means that the Web environment as a medium absorbs all other media that are directed towards plurality and heterotopia content and forms, thus creating a new logic of transparency of media content. (Bolter, Grusin, 1999) Among such contents personal data and privacy as space at all plays an important role.

(1) If we ask the question from the beginning how the situation of current web environment differs from that of a private in the past, we need to build on some philosophical traditions that address this problem. One of these lines is a critique of consumer culture. Perhaps the most radical formulation was stated by the so called Frankfurt School and specifically Theodor Adorno. In book Minima Moralia he states in the fragment Asylum for the homeless: "The predicament of private life today is shown by its arena. Dwelling, in proper sense, is now impossible. (..) It is part of morality not to be at home in one`s home." (Adorno, 2005, pp 38-39) Throughout the entire book Adorno aims at analysis of alienation, particularly in terms of consumerist culture. He concludes that, due to mass reproduction penetrating into all spheres of life, even our privacy is not the domain of individual freedom. In 1951, when the book was first released, he provides an insight into prospective development of reproductive technologies and their impact on the privacy. This process has not only stimulated specific media, in the case of Adorno are mainly film and radio. It also implies, that separation of public and private, once clear, is increasingly questioned. Indeed our whole idea, our very definition of private space has been changed. According to Adorno, the false identity of individual and general is inferred here - our privacy on the one hand and the public sphere based on the uniformity of individuals on the second. Uniformity of the private sphere is thus foisted as a means of identification with the community. Along these lines and particularly with Adorno we can formulate a basis of our research. Privacy in terms of mass media and especially social networking is not sphere, which would be only opposed to the threat of misuse, and thus driven by the dynamics of protection against the logic of the media. But it also works in reverse dynamic through pressure to publish the contents private by the user. He is motivated by a desire to identify himself with others just on the basis of common or uniform private contents (holiday or celebration pictures, as well as information about the school or hobbies).

(2) In addition these dynamics interact with the further development of the media in the sense that new possibilities of the interactive media given into the hands of individual users, not broaden their freedom, but rather they are used for deeper penetration of the media mechanisms into our lives and specifically our privacy. In the words of Michel de Certeau and Reading as poaching chapter from his book The Practice of Everyday Life: "In any event, reader`s increased autonomy does not protect him, for the media extend power over his imagination, that is, everything he lets emerge from himself into the nets of the text - his fears, his dreams, his fantasized and lacking authorities. This is what the powers work on that make out of "facts" and "figures" a rhetoric whose target is precisely this surrendered intimacy." (de Certeau , 1984, p 176) Though the text of 1980 was directed towards the medium of text and reading, we see the actuality in the perspective of social networks. De Certeau here shows that the new options, such as accessibility to dispose of their own personal data may not be an increase of privacy protection. Because our will to limit this access to our personal data is based on the idea ("imagination") about our privacy, which is already incorporated in the logic of the social media networks. In addition this phantasm of "surrendered intimacy" allures through the promise of authentic human presence within otherwise highly impersonal communication in a virtual environment.

(3) This second level of media logic thus draws our attention to the issues of power, surveillance or influence in shaping our personality. At this level, it is almost indispensable to take recourse in the analysis of Michel Foucault. In his work he dealt with the particular techniques of discipline in modern societies and institutions. He analysed the rise of modern hospitals (Foucault 1973), psychopathology (Foucault 1972), prisons (Foucault 1975) or the history of sexuality (Foucault, 1976). Along his entire oeuvre Foucault warns against the reification or objectification of power as such. It cannot be simply seen as mere repression or particular institution. Power does not present only invasion into the freedom of individuals. It is interplay of forces that have been already shaping our concept of freedom. It is ubiquitous and thus we cannot escape. Not because it always surrounds us, but because the power itself helps to shape our individuality, which seeks to resist the power (Foucault, 1976). Foucault's analysis is even more

appropriate in the perspective of Internet environment and the issue of privacy. He invites us not to reduce abuse and the protection of privacy on the Internet as two opposites. Undoubtedly we enter play of intersecting forces, which themselves constitute the entire sphere of privacy in the web environment. There is not only a counterweight or the result of our actions in the virtual environment, but rather its condition and constantly changing basis.

Even from such a brief cursory view, we see that power in Foucault`s view is not an overburdened problem or prime focal point of research. It is a subtle medium of human relationships and Foucault himself points out that he deals far more with people or agents - in general subjects - who are shaped by that power, rather than with the power itself (Foucault, 1982). Research on privacy and personal data in a web environment must therefore monitor not only the distribution of personal information or the mere possibility of leakage and misuse. We need to trace user behaviour itself, as we saw in Adorno and de Certeaua already. It is necessary to describe and compare the formation of user subjectivity in social networks with respect to its own priorities and attitudes in the protection of their personal data. Finally - it is necessary to replace the binary model (repression - protection; abuse - restriction of access) by functional model: tracing the behaviour of the user, its strategy of identifying and sharing, conditioned by his very notion of privacy.

3. Aims and methodology

In the following section shifts our attention towards our research and comparison between Facebook users in two countries. Between different countries and cultures, there are differences that are often discussed in areas such as psychology, business or marketing. These cultural differences have been studied for many years and are reflected in virtually all spheres of human activity. Many studies are focused on the comparison of two (sometimes three) countries. In the literature, the most frequently chosen countries are U.S. and China. These are the typical representatives of the Western (Euro-American), respectively Eastern (Asian) culture (meaning worldwide). For example, the study (Cheong et al., 2010) points out significant differences in the (cultural) values presented in the context of marketing communication as well as in the strategies. The article (Chung-Shing et al., 2005) explores the differences in a perception of the importance of the most debated issues of the contemporary world (AIDS, alcoholism, accidents, crime, etc.). Cultural congruence of websites is the main topic of the study (Li et al., 2009). The authors focus on, as in the previous examples, comparison of the culture of the U.S. and China, here in terms of efficiency in e-business. In terms of social networking can we name at least study (Wan-Hsiu, Men, 2011), in which the authors explore cultural differences in communication of companies on social networks.

The reason for the formation of this article is, beyond above presented facts, especially large importance of privacy, which is today in the context of the Internet and social networking widely discussed topic. ICT and internet changes our lives in several ways, e.g. increases our freedom of speech, changes job demands, shifts abilities that are valued in the society and so on. (Doucek et al., 2011) (Novotny, Jasek, 2013) Nowadays, we do not see information technologies and the internet only as thing that makes our life easier, increases the extent of our freedom and makes a democracy more effective. Their downsides are also mentioned increasingly. We can mention for example easy availability of personal (sometimes even intimate) details of individuals, the possibility of misusing of these data, the potential of concentration of power in the hands of individuals or organizations that own these data. (Reznicek et al., 2013) Every Internet user is forced to share some of his personal data just by a usage of various internet services. The number of services, which request these data, is constantly increasing, as well as demands on number and degree of our privacy. (Smutny et al., 2013) The most often users enter their personal data in their profiles on social network sites. These profiles are also increasingly using for logging in to other services on the Internet (Facebook, Twitter, Google+). Thus users' personal data spreads further to other Internet applications.

Comparison of Czech Republic and France was chosen because, despite the uniformity of fundamental values in Europe, both countries have undergone different historical development in the past century, which of course affects the value system of each country's population.

The actual research aims to explore the differences in approach to the privacy of the young generation in Central and Western Europe, namely in the Czech Republic and France. Are there between selected European countries any differences? In which country have people more responsible approach to the disclosure of their personal data on the Internet?

For the analysis of these problems, we have developed several research questions. Then, on this base, we gathered the data. We were interested in the following research questions:

▪ What kind of information is the most often freely available?

▪ What information is most often available to friends but on the contrary hidden to other users?

▪ What is the most frequently shared information on the wall of Facebook in each country and if the information is only visible to friends or even to other users?

The data were collected in spring 2013 from February to April. We have analysed totally 531 profiles of Facebook of people aged 15-30 years. It was a younger generation, which is the main age group of Facebook users. 277 profiles belonged to the people from the Czech Republic, 254 profiles belonged to the people from France. For each profile was gathered visibility of monitored data in two cases. The first was the visibility of data from the perspective of friend (i.e. we explored an account from a profile, which was in friends list). The second was the visibility from the perspective of a random user of Facebook, i.e. the user that was not included in the circle of friends in the monitored Facebook account.

4. Results

The complete results are in Table 1. The table includes majority of the items that can a user of Facebook put into his profile and then disclosure outside of the circle of friends. The most significant and the most interesting differences in results between the Czech Republic and France are shown in the graphs below.

Table 1: Complete percentage results of completed items in the two views – public and private (view as friend).

	CZ PUBLIC	CZ PRIVATE	FR PUBLIC	FR PRIVATE
Name	**98 %**	98 %	**73 %**	73 %
Project	**17 %**	36 %	**8 %**	16 %
Position	**9 %**	21 %	**11 %**	20 %
City/Town	**7 %**	15 %	**12 %**	24 %
Length of time (project)	**7 %**	17 %	**7 %**	13 %
Projects	**18 %**	35 %	**6 %**	14 %
School/University	**43 %**	82 %	**35 %**	74 %
Length of time (school)	**18 %**	34 %	**10 %**	25 %
Courses	**5 %**	13 %	**5 %**	8 %
Degree	**3 %**	24 %	**7 %**	27 %
Schools/universities	**43 %**	67 %	**34 %**	65 %
Present project/university	**39 %**	79 %	**12 %**	19 %
Present or last stated school/university	**41 %**	82 %	**24 %**	45 %
Present or last stated project	**13 %**	32 %	**2 %**	3 %
Current location	**40 %**	68 %	**52 %**	76 %
Hometown	**31 %**	56 %	**44 %**	59 %
Relationships status	**19 %**	58 %	**16 %**	38 %
Family	**21 %**	73 %	**22 %**	66 %
About you	**21 %**	22 %	**23 %**	49 %
Gender	**82 %**	91 %	**70 %**	71 %
Birthday	**4 %**	69 %	**24 %**	74 %
Interested in women/men	**14 %**	40 %	**10 %**	22 %
Languages	**8 %**	31 %	**14 %**	20 %
Religion	**1 %**	23 %	**6 %**	9 %
Political beliefs	**1 %**	12 %	**6 %**	6 %
E-mails	**2 %**	45 %	**18 %**	60 %

	CZ PUBLIC	CZ PRIVATE	**FR PUBLIC**	FR PRIVATE
Phone	**0 %**	15 %	**1 %**	6 %
Instant Messaging	**1 %**	26 %	**5 %**	29 %
Address	**1 %**	7 %	**2 %**	5 %
Town/city	**1 %**	13 %	**11 %**	25 %
Zip	**0 %**	1 %	**0 %**	2 %
Website	**14 %**	17 %	**7 %**	10 %
Networks	**11 %**	11 %	**21 %**	24 %
Favourite Quotations	**8 %**	19 %	**3 %**	8 %
Posts from personal life	**23 %**	96 %	**37 %**	93 %
Occupational posts	**7 %**	49 %	**18 %**	63 %
Post - comments of current events	**22 %**	94 %	**28 %**	79 %
Post - fun	**29 %**	97 %	**25 %**	65 %
Photos (not only profile picture)	**33 %**	100 %	**51 %**	93 %
Number of friends	**61 %**	90 %	**46 %**	71 %
Liked pages	**58 %**	92 %	**45 %**	76 %

In the following text, we will focus on answering of three research questions, that we have proposed in the previous section.

4.1 What kind of information is the most often freely available?

To answer this question, please consider the following two graphs. The first chart shows us the data, which are the most often available for the public view. The graph shows that most freely published data are name, gender, friends, liked pages, current location, school/university and posts on the wall related to personal experiences, posts containing entertaining content and comments of current events. I.e. the data of general character. In contrast, data containing contact information, such as address, phone number or e-mail and data relating to personal beliefs (religion, political beliefs) are published at least.
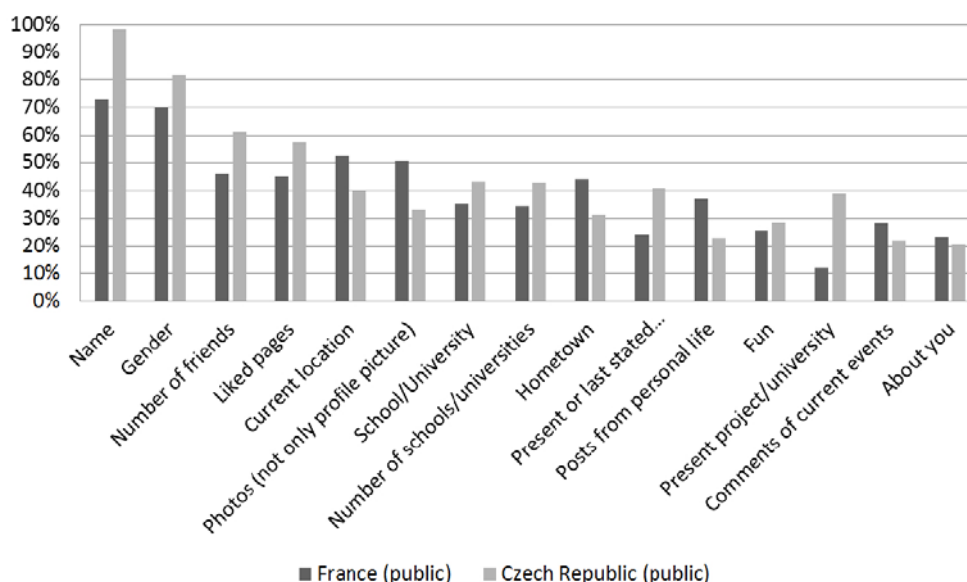
Graph 1: The most frequently published information in the public view.

The second graph shows the data for which the largest differences were found between the users from Czech Republic and France, when comparing published data in the public view in both cases. The biggest differences in the published data are in the publication of present project/university, as well as in name, birthday, e-mail, types of contributions published on the wall of user, photos and friends. Interestingly, users from France do

not publish in more than a quarter of cases their true name. I.e. they use a profile under a different name or nickname. But (against the Czech) the French frequently publish their e-mail address, date of birth and information about their current location and hometown. Czech users disclose more information about present school/university, as well as about their friends and pages they like.
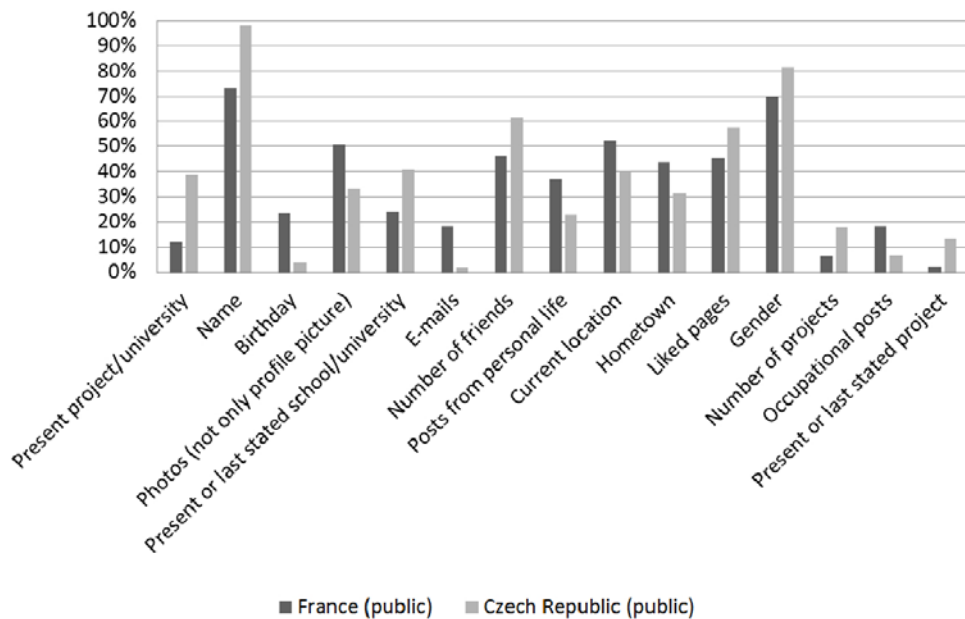
Graph 2: The biggest differences in the published information in the public view between France and Czech Republic.

4.2 What information is most often available to friends but on the contrary hidden to other users?

To answer the questions, let's look at the following graph. It shows the difference between information released to friends and released to general public, always separately for both countries. The graph subsequently shows a comparison of both countries, where the greatest differences were found.
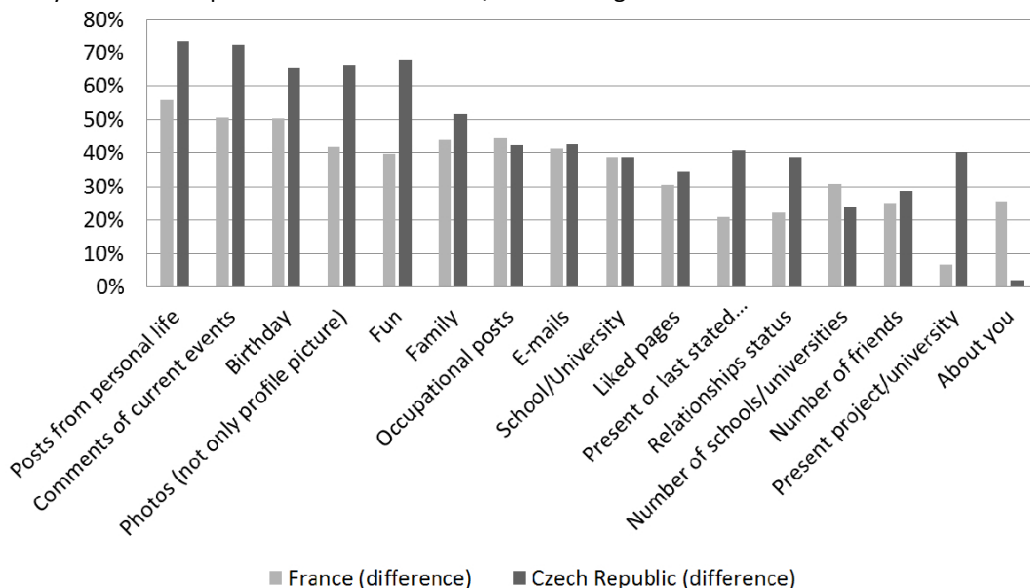
Graph 3: The most interesting differences (difference between friends and public view) in the availability of information.

When comparing the differences among public and private data available in each country, the most significant differences were found out in posts on the wall, date of birth and photos presented on Facebook. In the Czech Republic is the difference about 70% (for example 96% of users from the Czech Republic make posts from personal life available to their friends, but only 23% to general public), in France it is about 50%. Approximately 40% difference was found out in data relating to family, employment position, e-mail, school and pages that user likes. For these data the differences are more or less the same for users from the Czech Republic and France. The most significant differences in data availability between France and the Czech Republic relate to the current employment position (33%), funny posts on the wall (28%), information about user (25%) and published pictures (25%).

4.3 What is the most frequently shared information on the wall of Facebook in each country and if the information is only visible to friends or even to other users?

Our third question concerns data published on a user's wall. Here we can see that in the case of public posts the French frequently publishes posts about their personal life, work and past events. Czech people let more often available to public only the posts with funny character compared to the French. In the case of posts published for a circle of friends, majority of Czechs and the French writes on the wall posts from their personal life. The differences can be found in other types of posts. Czech people more than the French publish on their wall posts commenting current events (news) and posts that are funny. On contrary the French publish more posts associated with their employment. In the overall comparison, Czechs publish their posts frequently only in circle of friends, while the French often leave their posts freely available.

Results from evaluation of publishing pictures, information about friends and favourite websites show that in the case of friends the information are more often published by Czech users in all cases. In case of publishing to general public, it is the same except for pictures that are more frequently published by French.

5. Discussion and conclusion

In the context of this paper, an important issue is a use and a possible misuse of the freely available data that can be automatically harvested by bots (data-harvesting bot) and further processed by third parties. Although our research also confirms universally accepted fact that Facebook users have less of their data freely available to public than available only to friends. However, it is necessary to highlight some data that can be used for HR – see (Bohmova, Malinova, 2013) – and marketing, or vice versa abused for various forms of cyberbullying in the school environment or bullying in workplace. In an environment of Facebook service, it is primarily three types of data:

- Personal data: belief, orientation, references to family, political opinions, contact information, what the user likes, employment/school (HR), partially pictures and multimedia content
- Information on location: address, current position (marketing - sending e-mail offers)
- Data on interaction: a post on the wall, partially pictures and multimedia content, comments

These data can be mis/used most often for unfair marketing practices. On the one hand, these data are used by Facebook itself for targeted advertising. On the other hand, the publicly available data are misused through their harvesting and subsequently selling to third parties. These include e-mail, phone and instant messaging, which can be supplemented with additional information (e.g. physical location) of the subject that owns it and used for targeting in an unfair commercial communications campaign. From the perspective of our research, it can be seen that in this context the French are more at risk because they make these data publicly available to a greater extent. Especially they do not protect their e-mail so often unlike the Czechs. In addition to unfair business practices, these data may be secondarily misused to gain control over the profile, for example due to previously gained control over an e-mail of a user.

Equally important are the social consequences when these data are used by any person for the purpose of discrediting or damage the reputation of a particular individual. It could be personal data, available posts, comments and pictures that are a gate into the private activities of a man. In the school environment the information can be used for cyberbullying of a student in a particular group. An example: an innocent photo from Facebook can be simply modified and send anonymously to group members. In the working collective there are especially the following types of bullying:

- Mobbing – bullying by colleagues in a team

- Bossing – bullying by superiors

- Staffing – bullying by the subordinates to the superior, the effort to unseating

Misuse of selected data (beliefs, political opinions, etc.) along with other forms of pressure - underestimation of work performance, constant criticism, assigning meaningless actions that have nothing to do with the working position - may amplify the negative effects. Our study shows that 51% of users from the France have their photos publicly available in comparison of 33% users from the Czech Republic. In France, they don't protect their e-mail so much and they often have publicly available their personal posts. These are only some of the problems arising from the use of private information available about a person and it is only one side of the coin. Other problems related to this topic are generated in a societal context and we will concern about them below. Toward our topic it is appropriate to refer to other resources where authors deal with consequences associated with data available via social media – (Lashkari et al., 2010), (Young et al., 2013) or (Ibrahim et al., 2012).

Towards a philosophical basis sketched in the introduction, we can continue in a particular archaeology of subjectivity in environment of social networks on the internet. Based on our data collection, there is an obvious difference not only in the actual administration of users' personal data, but also in their relationship to the network as a whole. While the French Facebook users show more effort to protect their information in general, in case of the key items in relation to the profile in the network and their real lives, the opposite is true (see email, location, posts on the wall). Despite of a greater tendency to publish a large number of surveyed items, Czech users very strictly protect information that make them identifiable at other levels (phone number, email, location). For most of these items, the publishing rate by the Czech users is around 1%, some items such as telephone number or zip are not published at all. Against the premature conclusion that could only quantitatively evaluate the French privacy, we provide more accurate insight. Differences in the data indicate rather a different role that the social network plays. In France, the network is more tightly linked to other layers of identity of users. This naturally puts pressure on better control of the published data. In the Czech Republic, social networks follow first the logic of remediation – rather than create a supplement to real identities, so they act as an alternative to real identities: Social network is a space in which the users do not follow their identification data but rather generate new relationships on media basis. This can explain less pressure on protecting the remaining items of personal data that are involved in the creation of an alternate reality (e.g. status, friends, favourite pages).

The survey results are therefore consistent with philosophical basis. (1) At the level of criticism of consumer culture we can use Adorno's conceptualization of the attack on privacy in data analysis. This happens not only through the threat of misuse, but from the opposite side by putting pressure on the publishing of personal data by a user. (2) At the level of media reflection along with Michel de Certeau, we see that the media (in our case social networks) extend the possibilities of user behaviour in relation to their data, but do not add autonomy of their users. Media logic penetrates the user's imagination, forms "his fears, his dreams, his fantasized and lacking authorities" (de Certeau, 1984, p 176) and thus also his idea of privacy. (3) We can expand together with Michel Foucault these media penetration mechanisms into individual ideas. He tries to conceptualize the phenomenon of power not as a unity or centralization, which attacks on our individuality, but like the fabric of the network which helps to create it, including our ideas about privacy and its protection. In the study of outlined power we cannot only monitor cases of penetration to privacy. It is necessary to describe and assess the acts of users themselves, who are always already shaped by that power.

In general, we can summarize that the social networks on the internet are at a very specific level at which the individuality of the user interferes with the invasion of transpersonal structures, which are characterized here: (1) their mass, (2) media logic and (3) nature of power. Naturally, this issue raises the need for specialized interdisciplinary elaboration. It can not only provide the analysis, description and evaluation of the dangers that are hidden in the accessibility of personal data published by users, but also develops some considerations (Adorno, Foucault) about development of the human personality in today's dynamic environment.

Thus, although our data are relatively limited and comparison only bilateral we consolidated general perspective of how to approach the problem of privacy on social media and its use in further research. That can include not only enlarging the data to certain representative extent or including other social networks, but also inquiry into different areas of the field. In this perspective deeper research of intentionality and agency in virtual environment, cultural stereotypes, influence administrator intrusion or actual data-mining abuses and

various other projects need to be drawn.

Acknowledgements

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Measuring the E-Word of Mouth Reputation and its Influence on Financial Performance

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Abstract: In the financial sector, in the middle of an unthinkable global economic crisis, what is said and written freely, and is considered to be the contemporary word of mouth (wom), is expressed through blogs and social media. As part of the respective PhD research, and after having thoroughly studied the literature of traditional word of mouth (wom) and electronic wom (e-wom), the authors of the present paper created a model that aims to answer: to what extend the e-wom influences each one of the seven dimensions of reputation, whether this influence is significant for the banking sector and how can the e-wom affect the performance of a company. This study provides a tool that enables researchers to measure the actual positive, neutral or negative effect of e-wom on reputation and more specifically, on the financial results of a banking institution. A research model was created with the intention to rate all the publications in blogs and social media related to three major banking institutions, for one year time, and followed an evaluation of how their reputation is actually affected by these publications. Within the context of the present research, the authors are currently testing the connection of e-wom reputation and financial performance of an organization, by using e-wom as an independent variable in a model that measures financial performance.

Keywords: word of mouth, reputation metrics, social media, blogs, performance

1. Reputation

Reputation is an intangible means that can create revenue for companies, increase their clientele and guarantee financial resources (Mailath and Samuelson, 2003).

Practitioners also agree on the importance of reputation. In a survey conducted by Paul Dunay (2008) with a sample of financial institutions' senior management executives, 53% of respondents agreed that reputation management is a high priority. A large number of companies seem to not only monitor corporate reputation, but also try to enhance it by participating in blogs and social networking sites like Facebook and LinkedIn. In these terms, and in the context of the present research, a first step the authors needed to undertake was to assess the Reputation measurement models – tools that had been used, until that point.

Previous models:

- The Davies Corporate Personality Scale (2003)

- The MacMillan et al. SPIRIT model (2004) of Reputation

- Berens and Van Riel (2004)

- Walsh and Wiedmann (2004)

- Fombrun's Reputation Quotient (RQ) (1996) and its seven dimensional extension called the RepTrak Pulse, that was actually considered as the most appropriate one to use in the present research.

The RepTrak Pulse is a tool that tracks the key performance indicators grouped around seven reputation dimensions that research has proven to be effective in getting stakeholders to support the company. The RepTrak Pulse measures the health of a company's overall reputation with consumers. It provides information for the intangible assets within the firm and a measure of beliefs and attitudes of stakeholders. This information can be linked together to enhance strategic decision-making (Kevin Money and Carola Hillenbrand, 2006).
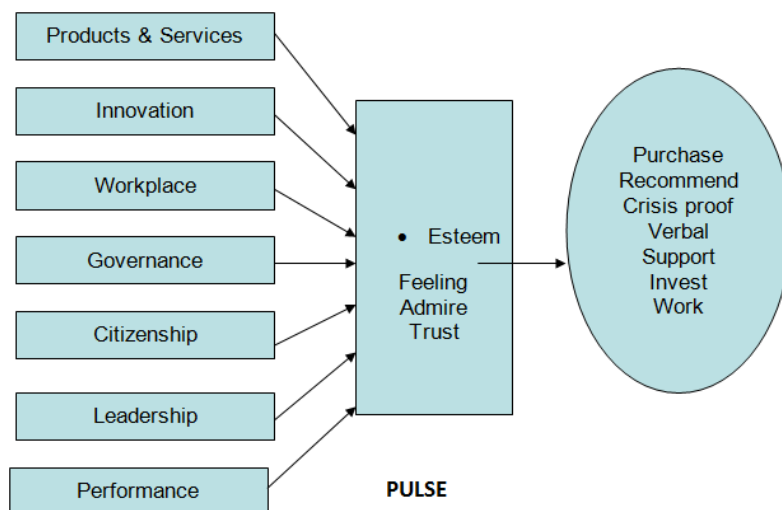
(Rep Trak Pulse after Van Riel, 2006)

Figure 1: The strength and flexibility of the RepTrak Pulse, suggest a wide range of research applications and many testable hypotheses across a range of stakeholder groups (Vidaver-Cohen, 2007).

For the needs of the present study, the authors use the seven indicators offered by this model (namely, Products & Services, Innovation, Workplace, Governance, Citizenship, Leadership, Performance), so as to examine how the electronic word of mouth (e-wom) affects each one of them, using as case studies particular banking institutions. They move on to examine how this reputational relation can actually influence the financial performance of the institutions under investigation.

Taking into consideration research that connects the seven dimensions of the model with their impact on organisations (Vidaver-Cohen, 2007), the researchers of this study proceeded to examine:

1. How online wom (generated by blogs and online social media) affects the reputation of an organisation?
2. To what extend the positive or negative effect of online wom can further influence the actual performance of this organisation?

Before proceeding with these questions, there is a need to define word of mouth and how this is measured.

2. Word of Mouth

Word of mouth (wom) can be defined as an ordinary conversation between people that happens face to face, by phone, or electronically. It is a process of exchanging information or opinions. As per Keller and Berry (2006): "We don't need expensive copywriters, a specially crafted brand voice, and big campaigns to reach customers. We just have to talk with people in our own style, through direct channels - from conference calls and small salon like conferences to blogs and online communities".

In another study Goldsmith and Horowitz (2006) claim that e-wom constitutes a very important factor in the consumer's seeking opinions and moreover, to their decision making process. Their survey studies the motivations for opinion seeking online. Their findings are quite interesting. They found that the motivational factors for opinion seeking online, range from basic utilitarian motives such as to get information to a more hedonic motive such as "it's cool".

Concluding, there are certain limitations as to the comparison of the importance and effectiveness of e-wom with traditional wom. Nevertheless, the aim of the present study is to examine whether the particular form of wom (e-wom i.e. facilitated by blogs and online social media) can actually affect the seven dimensions of reputation of a financial institution.

3. Measuring the E-Word of Mouth Reputation

After a thorough study of the literature relating reputation to wom (traditional or electronic) the authors of the present study concluded to the fact that the model used by Deephouse (2000) could constitute the basis of the research model that needed to be created.

The purpose of Deephouse's research was to examine the influence that the media and especially newspapers, can have on the reputation of a financial institution and to what extend this may influence the financial performance of the particular institution.

He studied, therefore, all newspaper archives that had been published for one year, in single metropolitan area of the United States, and referred to the commercial banks of this particular area (Deephouse D. L., 2000).

He characterized each media announcement as positive, negative or neutral, and that is how he came up with the quantitate results.

By measuring the media reputation of the banking institutions for one year, he actually concluded to the fact that "media reputation may influence the financial performance of such organizations" (Deephouse D. L., 2000).

The resource-based view of the firm proposed that a favorable reputation is an intangible asset that increases firm performance (Deephouse D. L., 2000).

Starting from that point, that managers should seek to cultivate positive evaluation by the media, in order to increase performance, and taking as a base the measurement model that was used, the authors concluded to the following questions and hypothesis:

When it comes to reputation, how can the e-word of mouth influence each of the seven dimensions of reputation?
Additionally, how can this eventually affect the performance of a particular banking institution?

In order to proceed with the creation of the present model:
The authors collected all the publications in blogs and social media from January 2011 until December 2011 and referred to three Greek banking institutions. The period of time was chosen as it is considered to be one of the most extraordinary periods that the financial sector has ever faced.

In order to be able to make this data collection, a major reputation monitoring service was used. This is an online tool that monitors all media publications: from television, radio, websites, blogs and social media. In terms of blogs and social media this service also provides the influence rate of each publication.

The particular banking institutions were chosen as the cases of our study for two reasons: 1. they constitute major financial institutions for Greece and 2. data was available for these banks from the monitoring service.

In terms of the research procedure, the authors have undertaken the following steps:

- Using the service, they gathered all the data/publications of blogs and social media that referred to the three Banks.
- The total number of these was 52.365
  The authors sorted all publications by "impact rate"
  "impact rate" calculation:

  - For blogs: there is a 0-1 scale that derives from an algorithm of the measurement tool, according to the popularity and reproduction of the blog.
  - For other media it derives from the number of Followers in Twitter, the number of Friends or Likes in Facebook and Google Plus.
  - In case access is not allowed in order to measure the above numbers the official average number is used, namely: 120 friends/likes for every Facebook profile and 30 for Google Plus.
- An adequate clean sample of 6.000 publications with the highest influence rate was collected.

- A measurement model was created where each publication, after having been thoroughly studied,

    1. is categorized to one of the seven dimensions of reputation (Fombrun and Van Riel, 2004), and encoded accordingly
    2. is rated as positive (favorable to the organisation), neutral or negative (unfavorable to the organisation) (Deephouse D. L., 2000), with respect to the influence it exercises to this particular dimension and therefore to the reputation of the organization.

4. Conclusions & Discussion

The attitudes of generators of e-wom towards the Banking Institutions were mostly negative and aggressive rather than positive and favorable. This should be expected, during a major financial crisis, a term applied broadly to a variety of situations in which some financial institutions or assets suddenly lose a large part of their value. Since the 19th and early 20th centuries, many financial crises were associated with banking panics, and many recessions coincided with these panics (Kindleberger and Aliber, 2005) that were thought to be facilitated via spreading of rumours and wom. It can be therefore considered normal, when studying the attitudes that appear in a socially open network, that the results will be mostly unfavourable towards the banks under investigation in periods of crises.

Additionally, upon examination of the results pertaining to the seven dimensions of reputation, it is evident that Performance of the organisation is the one dimension mostly affected followed by Leadership, while dimensions such as Corporate Responsibility (here measured as publications related to Corporate Social Responsibility) were less prominent in the results. As previous research has shown (Luo & Bhattacharya, 2006), consumer reactions to CSR and other similar activities are not that straightforward and evident in terms of the value they add to the organisation. Therefore investment on CSR might not generate a return both in monetary, but as evident here, in reputation terms as well. This could lead to further research to generalize this finding, a task for researchers in Strategic Management and Marketing and also Business Ethics and Communication scholars.

There is also an opportunity, for researchers, to ascertain to what degree the dominance of negative e-wom is limited to certain sectors, certain periods or both. Banking seems to be an obvious candidate for negative e-wom as our research has shown, and we can hypothesize that due to the nature of the business this sign will not change in different periods. A comparative industry analysis and longitudinal research will be useful towards that direction.

Within the context of the present research, the authors are currently testing the connection of e-wom and financial performance of an organization, by using e-wom as an independent variable in a model that measures financial performance.

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From Demos to Data: Social Media, Software Architecture, and Public Space

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Abstract: The language of localities—like the Greek agora and the 18th-century coffeehouse—is deeply embedded in many political theorists' models of politics. And yet, since the debut of the telegraph in 1844, the unique configurations of networked technologies have restructured our lives, disrupting and challenging the expectations and understandings of public life premised on "the local." To date, political theory has addressed the ways in which these new technologies alter the "who" and the "how" of public life, but has largely overlooked similar transformations to the sites (the "where") of politics. Drawing from the work of Hannah Arendt, this paper argues that space matters for democratic politics, especially in the semi-virtual sites of social media such as Facebook, Twitter, and Reddit. This paper thus examines the ways in which the systems architecture (the organization of relationships between hardware, software, and users) of networked media has an effect on the democratic potential of these sites, using specific examples drawn from social media. Despite increased attention to virtuality accompanying the digital revolution, this connection between public space and democratic politics is ripe for further explication. Much like the built environment that structures our interactions in physical spaces, networks are designed, constructed, and maintained in deliberate ways. Unlike the physical spaces in which we live, however, networked spaces are easier to alter, manipulate, and control—often without the knowledge of users. Because of their increasing popularity and variety, social media exemplify these issues. Compare Facebook's (proprietary) algorithmically-determined Newsfeed with Reddit's self-moderated front page. The differences in these two site designs alter the content and priority of information that users see. The result is that these sites incentivize users into different attitudes, relationships, and behaviors based on the site architecture. In this way, social media highlight the importance of bringing the site back in as an object of critical analysis, especially as it is manifested in the mechanics of site design and the political implications of the resultant user experiences. By reconstructing the importance of public space as a site for democratic politics in a networked world, we are better positioned to understand the differences between various social media so as to evaluate the democratic potential of these sites.

Keywords: political theory, social media, public space, systems architecture, democracy

1. Introduction

In the landscape of today's internet, 73% of online adults use a social networking site of some kind—an even more impressive feat given the virtually limitless nature and variety of the internet (Pew 2013). Accompanying this increased popularity, and growing economic influence, is a plethora of discussions regarding social media's effects on individuals, on communities, and on democracy. In much of this discourse, however, "social media" is treated as a singular technology. Issues that pertain to one specific site—Facebook's privacy policy, racism and sexism on Twitter, and the use of Snapchat for sexting, for example—are often generalized to encompass "social media" as a whole. This conflation of specific sites with the more general term "social media" is so widespread, in fact, that even the very term, grammatically plural, is often treated as a singular object.

But social media, though they share certain broad characteristics, are *not* a single entity. As instances of public space, social media sites differ in the ways in which they gather users, relate them to one another, and incentivize them into actions. The result is a number of different user experiences, unique to each social media site. Place matters, no less in the virtual spaces of the Internet than it does in the built environment of the physical world. To date, following a longer trend that characterizes political theorist's examinations of the public sphere more broadly, discussions of social media have focused on questions of participants and behaviors. In so doing, these thinkers have neglected the ways in which questions of place, as evident in site architecture and design, also have an impact on public discourse.

To that end, this paper takes up the question of the relationship between software architecture—the principles of design for a system's elements, relationships, and usage patterns—and public space, making the underlying architectures of social media sites are an important component in their function as aspects of the public realm. Certain changes to site architecture, in other words, can help to facilitate—or foreclose—the possibility for democratic action, and the creation of more democratic spaces within the larger social media environment. Drawing on Hannah Arendt's concept of "work," I first explain how and why public space is a necessary component of a healthy democracy. I then turn to the virtual sites of social media, using the examples of Facebook, Twitter, and Reddit, to demonstrate how small, seemingly invisible alterations to site

architecture can have profound effects on key democratic roles formed and enacted in these spaces. I then end the paper with some concluding remarks as to further implications of this attention to the public space(s) of social media.

2. Democracy and Public Space

In many ways, public space grounds democratic politics. In the most literal sense, public space provides a location for the *demos* to make itself seen—in both the formal institutions of representation and the informal gatherings of citizens in protest or celebration. But public space, too, functions symbolically, providing reference points around which a civic consciousness is developed and maintained (see Anderson 1991, Parkinson 2012). Public space is a recurring feature of our most iconic images of democracy. From pictures of protestors in Tahrir Square, to images of voters waiting in line outside schools and churches to take their turn at the voting booth, public space frames and stages the various activities we understand to be quintessentially democratic.

Despite this ubiquity of public space, it is nevertheless often relegated to the status of background, a largely unnoticed framing device for the infinitely more interesting actors and activities that appear within its boundaries. Reflecting this, political theorists have tended to frame investigations of the public sphere in terms of participants and/or behaviors, norms, and attitudes. The "public sphere" is more often than not treated as a concept in the abstract, with little or no scholarly attention paid to the specific *sites* of political activity. But place matters, and politics does not occur in the abstract. Instead, it shapes and is shaped by the specific worldly reality that situates our lived experiences. In order to elucidate the importance of the world, of the things we build and live with, I turn to Hannah Arendt's concept of "work" and its relationships to her larger schema of labor, work, and action.

To be human, for Arendt, is a normative claim. One is fully, meaningfully human only insofar as one engages in the practices of labor, work, and action and thereby flexes one's capacities for freedom, collective meaning-making, and appearance in public. While much Arendt scholarship has focused on the capacity of action, Arendt herself clearly situates action within a common world of objects that appear to those within the public realm (see Markell 2011). In other words, Arendtian action and politics require public space.

Public space, in Arendt's understanding, is two-fold: that the world is common is attributable to both "the human artifact, the fabric of human hands, as well as to affairs which go on among those who inhabit the man-made world together" (Arendt 1998, 52). This man-made world of things—both the physical objects and their interpreted significance—comprises the human artifice, "the condition under which this specifically human life can be at home on earth" (Arendt 1998, 134). And this human condition is contingent on the practices of those within it, as "men constantly create their own, self-made conditions" and "things that owe their existence exclusively to men nevertheless constantly condition their human makers" (Arendt 1998, 9).The human artifice, the combination of the build environment and its interpreted significance that shapes and is shaped by the work of human hands, serves therefore as the condition of possibility for meaningful human life.

These physical structures that create the common world and house the public realm serve a number of important functions, for Arendt. The durability of the man-made use objects that comprise the human artifice lends it the stability and solidarity without which it could not be relied upon to house the unstable and mortal creature which is man" (Arendt 1998, 136). This man-made world of things, constructed by *homo faber*, not only creates a space that can stand against the cyclical demands of nature, but also affords actors some structure and protection from the boundless unpredictability of their action. By virtue of its durability, and accompanying utility, the human artifice separates the world held in common from the state of mere nature. In so doing, it "becomes a home for mortal men, whose stability will endure and outlast the ever-changing movement of their lives and actions" (Arendt 1998, 173). The stability of the human artifice makes possible the formation of a community that connects with the past and extends into the future.

In creating this "home for mortal men" which makes possible the distinctly human life found only in living together with others, the man-made world of things does more than simply stand against the demands of nature. It also structures the relationships of those within, facilitating the ties of artificial equality necessary to establish the "equality of unequals who stand in need of being 'equalized' in certain respects and for certain purposes" (Arendt 1998, 215). Serving as an objective reference point, the human artifice binds a diversity of unique individuals into a community of equals by allowing them to "retrieve their sameness, that is, their identity, by being related to the same chair and the same table" (Arendt 1998, 137). In so doing, the physical

environment of man-made objects, and the "web of human relationships" that overlays it, "relates and separates men at the same time" and therefore maintains the distinction and equality that are both necessary for action in the public realm(Arendt 1998, 52).

With Arendt's schema outlined above, it is clear that public space, as part of the man-made world of things, is crucial in setting the stage for political life. Elaborating on this basic acknowledgement of public space's political import, Parkinson (2012) examines more closely the necessity of public space for a specficially *democratic* politics. In so doing, Parkinson outlines four potential characteristics of public space. Public space, he claims, 1) is openly accessible, and/or 2) uses common resources, and/or 3) has common effects, and/or 4) is used for the performance of public roles (Parkinson 2012, 61). A healthy democracy requires public space in the fourth, performative, sense, and may possibly need public space in the first, openly-accessible, sense. Public space, as a common resource or as having common effects, however, is the *content* of democracy. The management of collective resources and the consequences of collective action is what democratic politics is all about (see Parkinson 2012; also Dewey 1946).

For Parkinson, public space's most important democratic characteristic is its role as the stage upon which public roles are performed. In this sense, democracy requires public space in order for members of the *demos* to articulate their interests, opinions, and experiences, form narratives, stake claims, scrutinize public action, and make collective decisions (Parkinson 2012, 36). This is public space as a stage for democratic activity, in the most literal sense—those spaces in which the light of the public realm shines on those within it. Public space, in this fourth sense, is the stage upon which the performative politics of democracy play out.

Augmenting this more active sense of public space as democratic staging, however, public space also operates more passively. In the first sense of public space as that which is openly-accessible, it serves as the precondition, the background to democratic performances. In other words, openly-accessible public space is where the collective "we" of a community is formed, and takes shape, where "one encounters other members of the *demos* and recognizes them as people one must take into account one's decision-making" (Parkinson 2012, 67). Openly-accessible public space is therefore important to democratic communities because it is in moving through these spaces that citizens encounter others and recognize them as potential claims-makers. This is the manner of public space embodied in those sites we traditionally understand as public—the park, the street, the school. Formed in both the built environment and the "web of relationships" that overlays it, these spaces make possible the creation of a *demos*, by providing opportunities for individual actors to encounter, and recognize, others as members of a single community.

With Parkinson's framework, it becomes clear that the value of public space is not solely found in the broad sense of stability that Arendt locates in its ability to house and frame the relationships that make politics possible. Instead, Parkinson's analysis demonstrates not only the specific ways in which public space functions is this stabilizing role, but also the political implications of changes to the spatial configurations of a given community. Public space is a necessary element of democracy, but it is not a stable, sterile, or static one. More than just the presence of a stage, sta*ging* matters for democratic politics. With this in mind, the creation and maintenance of public space(s) has long been used to promote, persuade, and oppress certain arguments, narratives, issues, and values in the public realm.

3. Systems Architecture and Public Space

Since the beginning of the 20th century, sociologists, political geographers, and urban theorists have been preoccupied with the relationship between democracy and public space. Responding to the trends of industrialization and urbanization that accompanied the turn of the century, these scholars turned to the city and the home as objects of study, to more clearly examine how the physical sites of human activity structured the lives of those within them (see Simmel 1903; Jacobs 1992 [1961]; Sennett 1974).

Like the physical spaces of buildings and cities before them, the architecture of social media sites is no less influential in structuring the kinds of interactions and activities that go on within. As spaces where a growing number of people spend a growing amount of time, social media demand a level of theoretical attention no less than the configurations of streets, cities, and buildings that occupied scholars for 100 years. Keeping in mind the various roles that public space functions in staging democratic politics, treatments of social media as a "virtual public sphere," disconnected from the influence of spatial politics, overlook an important

component. In order to more clearly evaluate the democratic potential of social media, then, we should start from the ground up, with a focus on the basic architecture of these wildly different sites.

Since the 1980s, when programmers Kent Beck and Ward Cunningham applied the architectural concept of "patterns" to their own practices of software design and development, software developers have been using the language of architectures to describe the most basic relationships between hardware, software, users, and data. For social media, these architectures are constructed by identifying and collecting "raw" data and building a system to capture and augment it—to put it to use (O'Reilly and Battelle, 2009). By (re)mixing, altering, and creating new patterns of usage or sources of data, social media sites create a variety of spaces that users act with, and react to, differently. In so doing, architectural changes to these often-overlooked strings of code influence how and to what extent users of these sites understand themselves to be active participants in a democratic public. Depending on architectural decisions, social media sites can be more or less likely to facilitate the kind of community in which users recognize and acknowledge themselves as members of an audience of peers instead of an individual users bound together by their aggregated reactions.

In this sense, the systems architecture of social media sites functions in much the same way as *both* the man-made world of things and the "web of relationships" that overlays it. Site architecture both constructs the spaces within which users interact with one another—making social media sites more or less public in the first, openly-accessible, sense—while also laying down rules through which users' relationships with one another are regulated, making it more or less likely that users will inhabit the certain democratic roles of public space's fourth sense. In this way, strategic choices on the part of site architects and designers can incentivize users into acting as a member of a larger site community, enacting the responsibility of recognizing, judging, and responding to others' claims that accompanies the recognition of oneself as a member of a given community. In other words, characteristics of social media sites' architectures can help set the stage (or not) for a democratic public to emerge.

Unlike sites like Twitter and Facebook, for example, the popular link-sharing site reddit is built around the idea that users (self-identified as "redditors") are active participants in building and maintaining the site's communities. The self-ascribed "front page of the internet," reddit is, in fact, comprised of over 5,500 active communities, all dedicated to a specific topic ranging from the mundane (e.g. r/movies) to the extremely specialized (e.g. r/grilledcheese) (About Reddit 2014). Redditors are responsible for all aspects of reddit's existence, from providing content to keeping up with site maintenance and introducing new subreddits. Perhaps the most important architectural element of reddit, however, is its system of upvotes and downvotes. The choice to vote a post "up" or "down" (a choice that is rare on social media sites) means that redditors are continually asked to judge, on behalf of the reddit community, the relative merit of any given content. The centrality of this engagement with content on reddit is evident in the site's use of karma, which "reflects how much good the user has done for the Reddit community" (About Reddit 2014). Karma, prominently displayed next to one's username, is indirectly determined by others on the site. Users gain karma through active participation on the site, by submitting popular links and responding helpfully to the links of others (About Reddit 2014; See also Silverman 2013).

By contrast to this sense of communal responsibility fostered through the active engagement of users in contributing, judging, and responding to content on reddit, sites like Facebook and Twitter minimize and isolate the responsibilities of individual users. On Facebook, for example, users are presented with a personalized Newsfeed, a constant stream of activity from those within one's network. With over 1,500 pieces of content posted to Facebook daily, the site uses an algorithm to determine which items—and in what order—to show users (News Feed FYI 2013). While the specific algorithm that Facebook uses to determine the order in which activity appears on one's Newsfeed is proprietary, it is designed to filter content differently for each individual user. Using both the unique characteristics of the post—the number of likes, shares, and comments, as well as any reports of spam or abuse—and the individual habits of the user, including one's relationship with the poster and the specific kind of content, the Newsfeed's algorithm chooses to feature those items it thinks the user is most likely to enjoy and to interact with (News Feed FYI 2013).
Recent changes to the Newsfeed have continued this trend towards hyper-personalization. Downplaying chronology, the newest iteration of the Newsfeed highlights older, but more active, posts, meaning users may continue to see the same content while newer and different content may be hidden (Wagner 2013). By privileging the posts from users with whom one has interacted previously, Facebook essentially restricts the scope of one's Facebook space—gently guiding users to interact with certain friends and content, to the

exclusion of others. The subtle, but immense, power of architecture is evident in Facebook's recent decision to reduce the number of "meme photos" and increase the number of "high-quality articles" that users see in their Newsfeeds (Kacholia & Ji 2013; see also Wagner 2013).

This restriction of information to only that which Facebook knows users will like (the "filter bubble" problem) of what Facebook itself decides is relevant, in a sense alters Facebook's publicness in the first sense of public space, as users are less likely to have the chance encounters that are important for the formation of a *demos*. More than this, however, Facebook's architecture's influence is felt in the fourth sense of public space, as it reduces the number and type of roles that any given user can inhabit by encouraging certain point-to-point interactions. One's Newsfeed, the foundation of one's Facebook experience, is not a representation of a cohesive community, nor are users encouraged to interact with it as such. There is no real "Facebook community" to speak of. Instead, users are presented with a stream of discrete posts, and encouraged to respond to each in turn, as an individual. There is no sense of recognition of oneself as a member of a cohesive audience. In fact, it is not evident even to the poster who, in fact, will see their status, picture, or link.

Similarly, Twitter's site architecture, while highlighting different patterns of use than that of Facebook, has comparable effects to the latter. For the first seven years of its existence, Twitter's timeline was presented to users in a strict chronology. Newer tweets appeared at the top, while older ones were pushed further down the page ("What's a Twitter Timeline?" 2013). In August 2013, however, the algorithm was changed to allow for "conversations" to be presented together, connected by a thin blue line that indicated their relationship as such (Kamdar 2013). Such seemingly small change to the site architecture, however, merely disrupting the strict chronology of the site, caused a stir through the ranks of Twitter's most dedicated users (Van Grove 2013a). Nevertheless, the change remained in place. Twitter CEO Dick Costolo justified the change in terms that speak to the influential nature of site architecture, saying that the original design was "confusing" to new users (Van Grove 2013b).

This architectural change in Twitter's sorting algorithm was introduced as a way to "make it easier to discover and follow conversations" on Twitter, as an attempt to capitalize on Twitter's popularity as a source for "real-time, global, public conversations" (Kamdar 2013; see also Van Grove 2013b)." In so doing, Twitter puts (up to three) individual tweets back into a larger discursive context. And yet, from the perspective of democratic public space the site nevertheless retained the same basic structure despite the shift. Unlike on Facebook, even, in which user reactions, on an aggregate level, are taken into consideration in ranking and rendering visible posts for other users, Twitter's model of chronology-based timelines demands little to no involvement form users. In this sense, Twitter abandons all but the very pretense of community on the site as a whole. Instead, Twitter functions as a network of networks, connecting users to interested followers, to whom they can broadcast tweets without expecting a response.

Though, like Facebook, Twitter is built on a number of point-to-point interactions between individual users, it asks of its users even less than Facebook and other similar sites. Users are not invited to interact with a tweet in the same way they are a Facebook status update (with its "like" action). Instead, because tweets' rankings are determined by chronology, Twitter users are not asked to make judgments on behalf of the community as to what is worth elevating, discussing, or sharing with others. Instead, activity is again, like on Facebook, restricted to "retweeting"—sharing another's post with one's own network—or responding directly to the original poster. Unlike the requisite reciprocity of Facebook friendships, on Twitter even the relationships that form the foundation of the network need not be reciprocal—users can follow another without being followed in return. In so doing, Twitter's architecture abandons the type of recognition that is the foundation of a democratic community, making it more difficult for users to encounter one another as equals.

Unlike Twitter and Facebook, then, reddit's unique architecture is meant to self-consciously foster feelings of communal responsibility in its users, who are tasked with the double-responsibility of acting as both actors and audience members. It is telling, perhaps, that users of Reddit are self-ascribed "redditors," while no analogous term exists for users of Facebook or Twitter. Introducing a community beyond the individual user, reddit's architecture is therefore built in such a way so as to recapture certain measures of value beyond the mere happiness of its users. Because of the site's unique architecture, redditors are instead tasked with the duty to act as both engaged actors and audience members, contributing, judging, and responding to content. The result is a self-regulating community, in which content is challenged, debated, and policed in a way unlike that of sites like Facebook or Twitter (see Silverman 2012).

In so doing, reddit blends the open-accessibility of public space's first sense (anyone can access reddit's content) with the democratic role-playing of its fourth sense. Placing user action, and the resulting relationships at the heart of the site not only incentivizes activity that fosters democratic roles of acknowledgement, claims-making, and judgment, but also encourages users to become invested in the identity of the site/community itself.

4. Conclusion

By extending the spaces of freedom and enlarging the public realm, social media call attention to the ways in which public space constructs and maintains democratic politics. Just as architecture matters for the built environment, social media sites should be distinguished by their differences in systems architecture and site design. In practice, this means that social media should be evaluated for, among other things, their ability to foster the kinds of user experiences that lend themselves to the performance of democratic roles.

At the same time, recognizing the important role of public space for democratic politics—even in the virtual environment of social media—calls attention to the unique challenges of being a participant in a networked public. It introduces a number of new concerns, like the proliferation of information and misdirection. When the room that structures political life is no longer visible, for example, participants must learn to cultivate the ability to perceive, appraise, and discuss the design processes and characteristics for themselves. This requires a different set of skills and demands of participants than those of traditional political life, while also providing more opportunities for distraction, misdirection, and uniformity. Nevertheless, rethinking public life in light of the possibilities of social media puts us one step closer to realizing their democratic potential, making the best of the historical circumstances in which we find ourselves.

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Networked Learning Based on Digital Curation

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Abstract : Social Digital Curation (SDC) is one of the most innovative types of Social Media. SDC is a process of creating ontology of a specific subject by selecting digital content suitable to the subject. The SDC utilizes web collaboration between participants of similar subject oriented communities. In order to define the subject, each of the SDC participants (curators) formulates a relevant set of keywords. A specific curation tool forms an input stream comprising a number of records having various levels of relevance and quality. The task of each curator is to filter the input stream by approving one record and rejecting another. As a result, every curator forms his/her own output stream that we consider as the personal curriculum. One of the most important features of the above process is the fact that the curation takes place in a form of collaboration with other curators of similar subjects. Current output streams of some curators may, in turn, form input streams of others. In this case, the conventional learning turns into a form of intensive collaborative learning action in which the curators participate, and which is the focus of our study. The network reality today requires concern for the proper and secure use of web information. The SDC provides students with a collaborative learning environment, which is refined by them. Advanced participants of the SDC network, that have high reputation, teach novices in their own style, while novices are being motivated to upgrade their reputation and to become successful learners and then teachers to other participants. The criterion of success of a person's SDC is twofold. It can be assessed individually by each of the participants, by evaluating the quality of that student's curation output stream. On the other hand, it can be assessed collectively when evaluating the student's reputation achieved during the curation. Besides creation of their personal curriculum, the curating students develop their digital literacy skills. One of such skills is so-called 'network awareness'. The SDC environment, being a dynamic and unpredictably transforming one, requires the user's ability to act correctly in unexpected situations, and helps to develop their network awareness. In our study, we observe a group of curators, which comprises both graduate students and faculty members. A popular curation tool, which is used in our study, is Scoop.it. The research combines both observing the curators' behavior in the network, and conducting individual interviews with the participants. Besides the qualitative research, we use computer simulation as a methodological tool for our study. We construct models of hypothesized curators' behaviors, and test them by running the corresponding simulations. Moreover, we assume that the SDC simulation can be used as a powerful learning activity to reveal a participant's metacognitive ability. We use the hybrid simulation software AnyLogic in our project. Using the hybrid simulation is innovative in the educational research. In our study, we test both the scientific, and the educational potential of the hybrid simulation for studying behavior of the digital curator.

Keywords: digital curation, social computing, hybrid simulation, web learning environment, collaborative learning.

> *"Getting information off the Internet is like taking a drink from a fire hydrant"*
>
> *Mitchell Kapor*

1. Social Digital Curation

This above epigraph refers to the challenge presented to us not only of the high quantity of information, but also of the quality of the information available today. Today, Web content includes a lot of incorrect information, mistakes, mistruths and information from non-authorized sources. The abundance of information, which creates valuable data and advanced information experts, is unfortunately also associated with misinformation, misleading and non-quality information. Because of the vast amounts of information available today on the web, we are required to teach students the skills of finding appropriate information and the proper use of this information (Hsiao et al. 2013).

If the above mentioned regarding the abundance of information would have appeared a numbers of years ago before the digital era, the only way to overcome with it would have been by hierarchical structure of categorization and sorting. In our work, we study an innovative approach for overcoming abundance of information that is called Social Digital Curation (SDC).

The curation comprises selection, preservation, maintenance, collection and archiving of digital assets. Curation is a specific activity, in which the participants receive an input stream of data, generated in accordance with a predefined set of keywords (tags), that each of the SDC participants (curators) formulates in order to define the subject. A specific curation tool forms an input stream comprising of a number of records,

which have various levels of relevance and quality. The task of each curator is to filter the input stream by approving some records and rejecting others. As a result, every curator forms his/her own output stream that we consider to be the personal curriculum. One of the most important features of the above process is the fact that the curation takes place in a form of collaboration with other curators of similar subjects. Current output streams of some curators may, in turn, form input streams of others.

Social Digital Curation is an innovative type of Social Media. It can be considered as a process of creating ontology of a specific subject by selecting digital content suitable to the subject. The process of selection and creation that is done in accordance to the curator's understanding, and in the way he/she perceives the subject is what we refer to as ontology. The SDC utilizes web collaboration between participants of similar subject oriented communities. It is a process that combines personalization and socialization whose essence is creating knowledge by selecting, arranging, combining and collecting digital content based on cooperation between participants. SDC is a content creation process with unique cultural and social characteristics. It deals with several trends: the rapid growth of information, the necessity to be able to find information and use it in a meaningful context (Rosenbaum 2011) and the utilization of prodigious potential of the emerging social networking process. Instead of one evaluator and processor of the knowledge, there is a network of trusted peers, supported by technology (Siemens 2006). The curator's role is to use content created by others in a digital network sources to create a high-quality and significant knowledge. Mihailidis & Cohen (2013) discussed three ideas of which SDC supports: 1. SDC is a new form of organizing knowledge. 2. SDC as value added – knowledge available any time and anywhere, distributed in different ways and from different sources. 3. SDC as digital and media literacy - SDC is an activity of solving problems, developing responsibility, analysis, evaluation and creation (Mihailidis & Cohen 2013).

In our research, we deal with using SDC as educational means. Specifically, we consider SDC to be a specific learning activity in schools in the digital society.

2. Educational Digital Curation

Educational digital Curation (EDC) is associated with utilizing the digital curation in the educational process. It includes introducing curation into learning, teaching, curriculum development and learning environments.

Future curriculum is a personal curriculum and is not a general curriculum tailored from above (Goldin 2009). According to our hypothesis, the output curation stream can be considered a form of the personal curriculum of the curated subject. This hypothesis is based on the understanding of the curation process as a personal action, which includes the selection, and categorization of different content fragments belonging to the subject. Additionally, in contrast with conventional learning, the curation is a form of a collaborative learning activity. The curation, as the learning activity, is the focus of our study.

The recent networked reality requires significant information security awareness. We hypothesize that the SDC is a powerful network awareness education activity. The curation, being a dynamic and unpredictably transforming activity, requires the user's ability to act correctly in unexpected situations, which is, actually, the network awareness. The SDC provides a unique collaborative learning environment, constructed by students themselves, on the one hand, together with the support system of their collaboration on the other.

During the curation process, novices learn from advanced participants (with high reputation levels). The novices are motivated to upgrade their reputation since it is considered as an "objective criterion" of the quality of their learning process.

Notice that the criterion of success of the educational curation is twofold. On the one hand, the teacher can assess it by evaluating the quality of the curation output stream. On the other hand, it can be assessed collectively by other curation participants in the form of the student's reputation achieved during the curation.

In general, curation (not especially digital) is a well-known human activity known since ancient times. The innovation of our study is in: a) the use of digital curation. b) the use of curation for educational purposes.

First of all, our study of the EDC is based on the investigation of curators' behavior patterns. Additionally, we study social characteristics of curation to verify our hypothesis about the curation as a powerful learning

activity at the new school. The research combines both observing the curators behavior in the network, and conducting individual interviews with the participants.

Besides the qualitative research, we use computer simulation as a methodological tool of our study. We construct models of hypothesized curators' behaviors, and test them by running corresponding computer simulations. Moreover, we hypothesize that the SDC simulation can be used as a powerful learning activity to reveal a participant's metacognitive ability.

We use the hybrid simulation software AnyLogic in our study. The using of the hybrid simulation has two goals. On the one hand, the hybrid simulation of the SDC allows studying the curation process and its regularities. On the other hand, it allows to study constructing the hybrid simulations as a specific innovative learning activity.

3. Methodology

3.1 Curation Software

In our study, we observe a group of curators, which comprises both graduate students and advanced curator (inter alia faculty members). A popular curation tool, which is used in our study, is Scoop.it (http://www.scoop.it) (see Figure 1). The Fig. 1 presents a scoop.it screen corresponding to the curation of a specific topic "Education and Cultural Change" (curated by Pierre Levy) including the personalization and socialization activity that has taken place on the topic shown. For example on the right hand corner the 13.5k views | +3 today can be opened to access further information regarding the socialization activity. The icon 'Suggest' reveals the stream of data that was received as a result of the keywords that were chosen by the curator. The symbol of the medal on the upper left hand side represents the level of reputation.
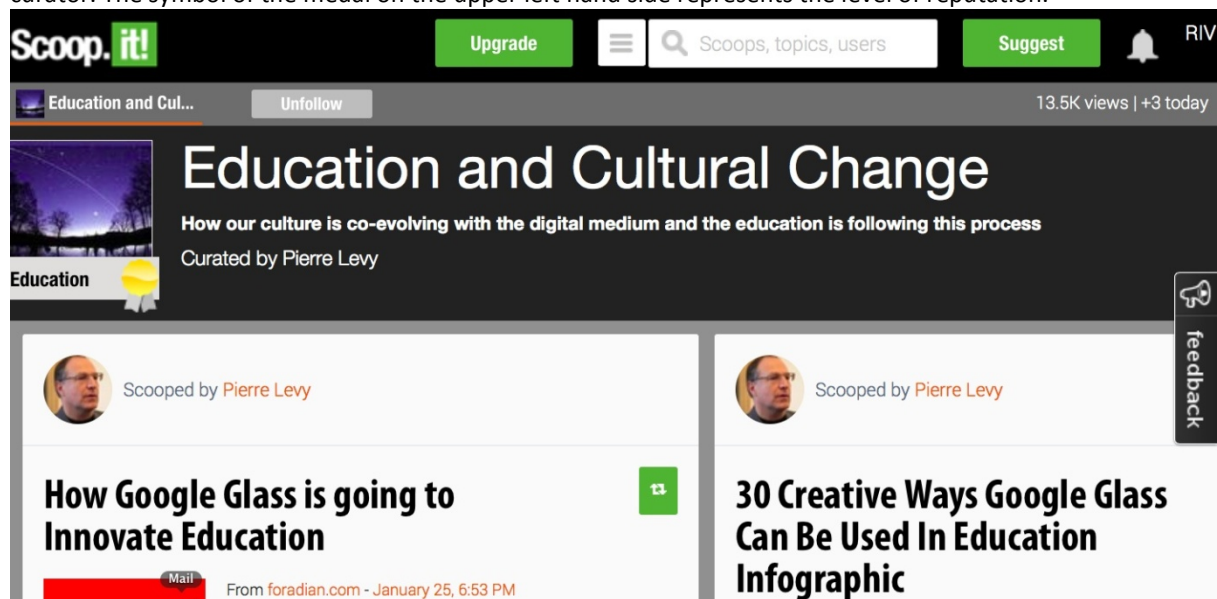
Figure 1. Scoop.it

Scoop.it is a social platform for choosing relevant content, combining it and publishing it after personal analysis and commenting. It generates a curation stream according to a set of keywords that is defined by the curators and proposes a diversity of information sources that is managed by them. The curators can also add contents, which are personally selected from other sources, and content that is published by other curators of similar subjects. It is a social media platform in which curators follow each other and react to their partners' scoops.

3.2 Hybrid Computer Simulation Tool

The simulation tool we use for the research is AnyLogic, which is a hybrid simulation software combining three simulation approaches: agent-based simulation, system dynamics simulation and discrete event simulation.

3.2.1 System Dynamics Simulation

System Dynamics (SD) is a field of study, which has the unique ability to understand, and to simulate real-world dynamic systems (social, economics, etc.). The SD methodology allows overcoming the complexity of the physical and social structure of these systems. It is a methodology that defines a problem and its solution by mathematical and logical analysis of cause and effect, behavior over time and feedback loops. Originally, the systems dynamics research was engaged in control theory and modern theory of dynamics of non-linear field of mathematics and natural sciences. It then extended to the areas of social sciences, industry, business, agriculture and geography. In recent years it has began to appear in the field of education. The simulation interprets the world by a differential equation in order to understand the dynamic behavior of the system, evaluate and improve it. The levels of the complexity of the process of taking bits of information from the world and turning them into a consistent and coherent theory can vary from trivial to the most challenging. The strong point of the concept of dynamic systems is that it provides a mutual connection between mental models and computer simulations, expanding by this the boundaries of our mental models as people and look holistically at the phenomena (Forrester 1994; Nuhoglu & Nuhoglu 2007).

3.2.2 Agent Based Modeling

Agent Based Modeling (ABM) is a kind of the computer simulation that determines dynamics by defining individual behaviors of each of the participating agents. The objective of ABM is to provide information about the system to be simulated, through analysis of situations being result of the agents' interaction. The ABM is a decentralized simulation approach, which describes the system from the perspective of the individuals constituting the system, rather than at the aggregate level of the system. The ABM modeling comprises: identifying the agents, defining their behaviors and running the simulation. The ABM model describes behaviors of each agent separately and the interaction between them. The ABM is able to illustrate how interactions between individuals can produce different phenomena: social patterns, norms, and other collective actions. It provides justification of such significant idea as the fact that the system is much more than just a sum of its parts (Macy & Willer 2002). The benefits of ABM are its ability to identify phenomena, provide a description and natural imaging of the system and adapt itself to the changes taking place in the system (Bonabeau 2002). A number of significant ABM models in different fields are known: industrial systems management, logistic networks, human resources, customers and suppliers, transportation and a variety of social systems.

3.2.3 Discrete Event Simulation

Discrete event simulation (DE) (Borshchev & Filippov 2004) is a simulation approach, having its roots is GPSS approach (Gordon 1961). According to this approach, there is a sequence of events that are organized around a discrete time. The occurrence of one event causes in response later events to be scheduled in the queue, according to a behavior rules described by a flowchart. The DE contains a number of so-called passive objects (entities). The entities (i.e. data records, in our study) don't have their own behaviors. It can be programmed to react according to rules, described by the flowchart's blocks. A discrete clock defines a scheduling of the DE. The clock is turned on if something significant happens in the model, i.e. when an entity begins or finishes its action. A model queue is used to store the list of waiting events. The simulation ends when the queue is empty.

3.2.4 Hybrid Simulation

Hybrid simulation integrates the three above simulation approaches. By combining different simulation methods, the hybrid approach enables to describe complex dynamic system taking advantages from each of the pure approaches. In hybrid models, the DE approach usually provides the top level of system simulation. It models the system updating according to the changes happened within the model. It allows considering the process from the objects' point of view. Alternatively, the ABM simulation enables to study the behavior of entities by programming them using state diagrams (Harel 1987). The SD simulation is usually used to model the linear behavior of the system's components.

In our project, the implementation of the computer model is performed by using the hybrid simulation software AnyLogic. AnyLogic comprises all the above types of simulation and provides their integration in order to create the as accurate as possible model of the system..

3.3 Participants

Our research was divided into two stages. The participants of our preliminary study were graduate students (n=35) of Science, Mathematics and Technology Education, each participating in a research seminar. The participants of the next stage of the study are graduate and undergraduate students (n=80) and advanced curators (n=5).

3.4 Instruments and Procedure

As mentioned above, the participants use Scoop.it as a curation tool.

The students had to select, collect, tag, comment and share materials enriching a topic chosen by them. Each student was requested to choose a topic for his research and to curate his topic so as to build his personal curriculum on the topic. The students received specific instructions about what they had to do during their curation activity. They had to curate the content from the curation stream generated by Scoop.it, from other Internet sources they found by themselves and from academic journals.

The students received instructions about the curation in general and about using the Scoop.it in particular. We told them how to create an account, how to create a topic, curate and maintain the topic. The students could choose whether they wanted to identify themselves by using their real names, or just by using a nickname. The students also received instructions about what they were instructed to do while curating, such as: to diversify their resources, to use academic resources in addition to other ones, to write *their* point of view while curating any item, to tag it, to use social tools to share knowledge with others.

During the semester we held discussions in classes about the topics' content and about the procedure. At the end of the curation project, the students had to summarize their curation experience in the form of a written report, which actually presents the sum and the analysis of the personal curriculum on the selected topic.

3.5 Method

There are three phenomena that, according to our hypothesis, have to be expressed in the curation process: Personal Identity Online (PIO), Data Intensive Science (DIS) and Social Media (SM). The analysis of the participants' curation activity was divided into three domains corresponding to the three aforementioned phenomena. We have defined a number of the main activities connected to the curation process. According to the mentioned above, we developed a conceptual framework to describe in a schematic way the EDC process, map the relationships between the operations that performed in the learning process and the trends we mentioned above: PIO, SM, DIS and to present factors affecting learner activities and products (see Figure 2).

The study consists of three stages. At the first stage, we followed the participants' curation actions and analyzed their work according to the study variables as detailed in the conceptual framework mentioned above. We collect their usage data, using software developed for this purpose. This software collects data of all the participants. We intended to find out which of the parameters are most important and how we can classify the students in accordance to their curation activities. In order to analyze the curation outputs we defined criteria for a qualitative curation output. The assessment of curation outputs is done in accordance with the criteria defined. In order to validate the data, the quality of curation outputs shall be considered by another judge.

The second stage of the study includes observations of the students' discussions in class and of the written report regarding the curation activity, in order to analyze the students' beliefs about the curation process and about the change that occurred in their attitudes during their curation activity. We also conducted in-depth interviews with some of the advanced curators that were participants in our study and analyzed their activities and beliefs.
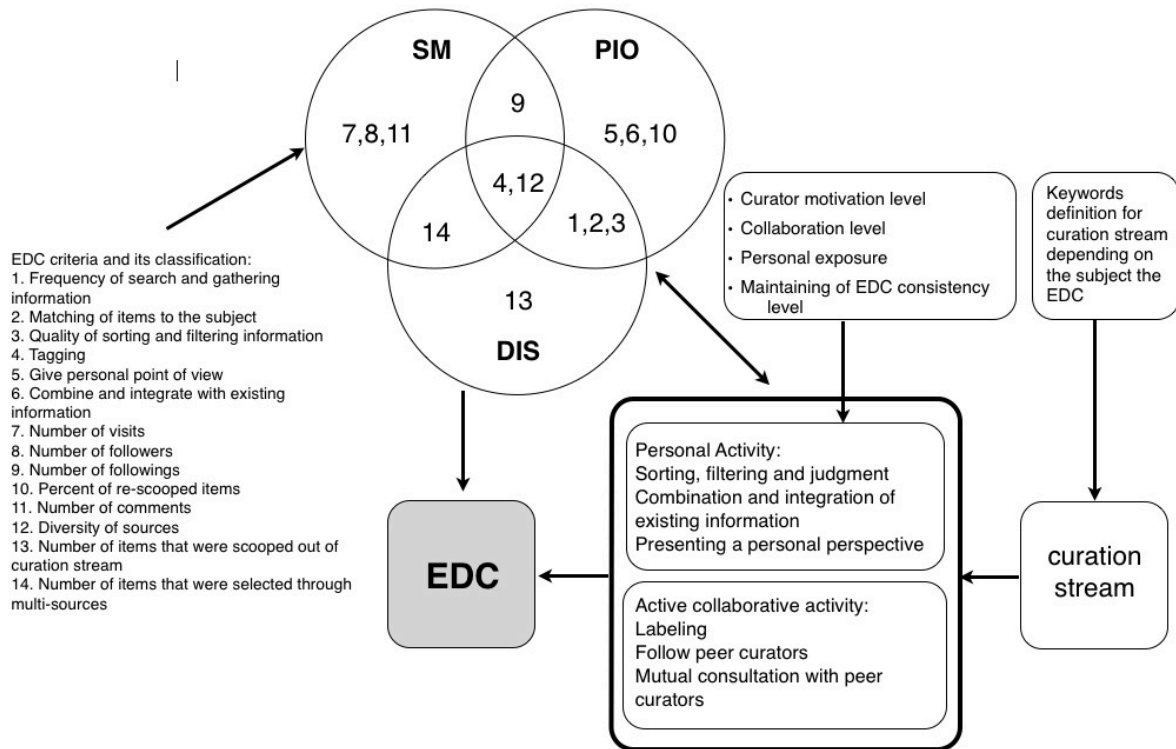
Figure 2. Conceptual framework of the study

At the third stage of the study we create a computer simulation of the EDC by using the hybrid simulation software AnyLogic. In this paper, we describe the current state of the developed model. In our model, the DE describes the sequence of the events. The system entities of the DE are both data records and curators. The system events are several of actions, such as: publishing the data record, deleting them etc. The system states of the model, which are driven by these events, correspond to the amount of records in the curation stream. The curator decisions are described by a flowchart. The ABM is used to describe the behavior both of the curators and of the data records. Each curator as well as a record is simulated as agents. The curator agent behaves according to the specific flowchart (Figure 3). Each *record* is also simulated as a specific agent programmed as a state-chart. In the combination DE - ABS simulation, the DE models the system's top-level while the ABS models the bottom level.

In our project, the SD simulation corresponds to the curation streams simulation. There are three kinds of streams and each of them can be considered as a stock. The flows are controlled by the state diagram (see Figure 4).

3.6 Discussion

Social computing provides tools that enrich the learning process. It expands the process of collaborative learning and emphasizes the mutuality between the construction process of each student and the cooperation and social relations created in the learning community. The learning community may consist of participating people who are far away in space and time.

Many researchers have found that the students we teach today are so-called "digital natives"; they have different patterns of work and different learning preferences than older students have, that students of this generation have social motivation for learning, they want to impress each other and join forces to help the group tasks, therefore the combination of social networking and education is necessary (Popescu & Cioiu 2011; Wheeler 2009). Preliminary examination of our findings indicated that the contribution of socialization increased the quality of products more than the contribution of diversification of the resources. In addition, there is proportionality between the level of personal activity of students - that is the level of the contribution of their personality to the process - and their social sharing. Although this is a preliminary research, it is possible to estimate from the findings, that the greatest importance in terms of the contribution to the quality

of the curation process is the use of social media tools and the internal desire/motivation of the curator to acquire knowledge through the process. The goal of the successful students was to learn from self-motivation and to try sharing their infosphere among their community of knowledge in order to improve their learning

The concept of EDC is a new concept as such it describes the educational process and is also an intellectual phenomenon that contributes to the creation of knowledge, intelligence and new skills. This technological, social and educational innovative phenomenon is associated with social and cultural phenomena surrounding us in recent years, and affects our way of life and our children's education. Yet, EDC is not prevalent as a formal educational process and research. In this study we are investigating this innovative phenomenon from theoretical perspective. The hybrid simulation of the curation process was build for this purpose.

According to our hypothesis, the hybrid simulation can be used not only as a research tool but also as a learning activity. As research tool, it is used in order to analyze the curator's behavior. As a result we plan to realize whether the curation is a superficial learning activity or whether there was deep and meaningful learning. In turn, creating the hybrid model of the curation process is a metacognitive learning activity, which requires the self-reflection from the student. Such kind of activity looks very promising as a complementary part of the educational curation.

Preliminary results of our study allow concluding that SDC has of great importance as a perspective educational activity. The use of a hybrid simulation both as a research and as a metacognitive means, significantly increase the educational potential of the curation.
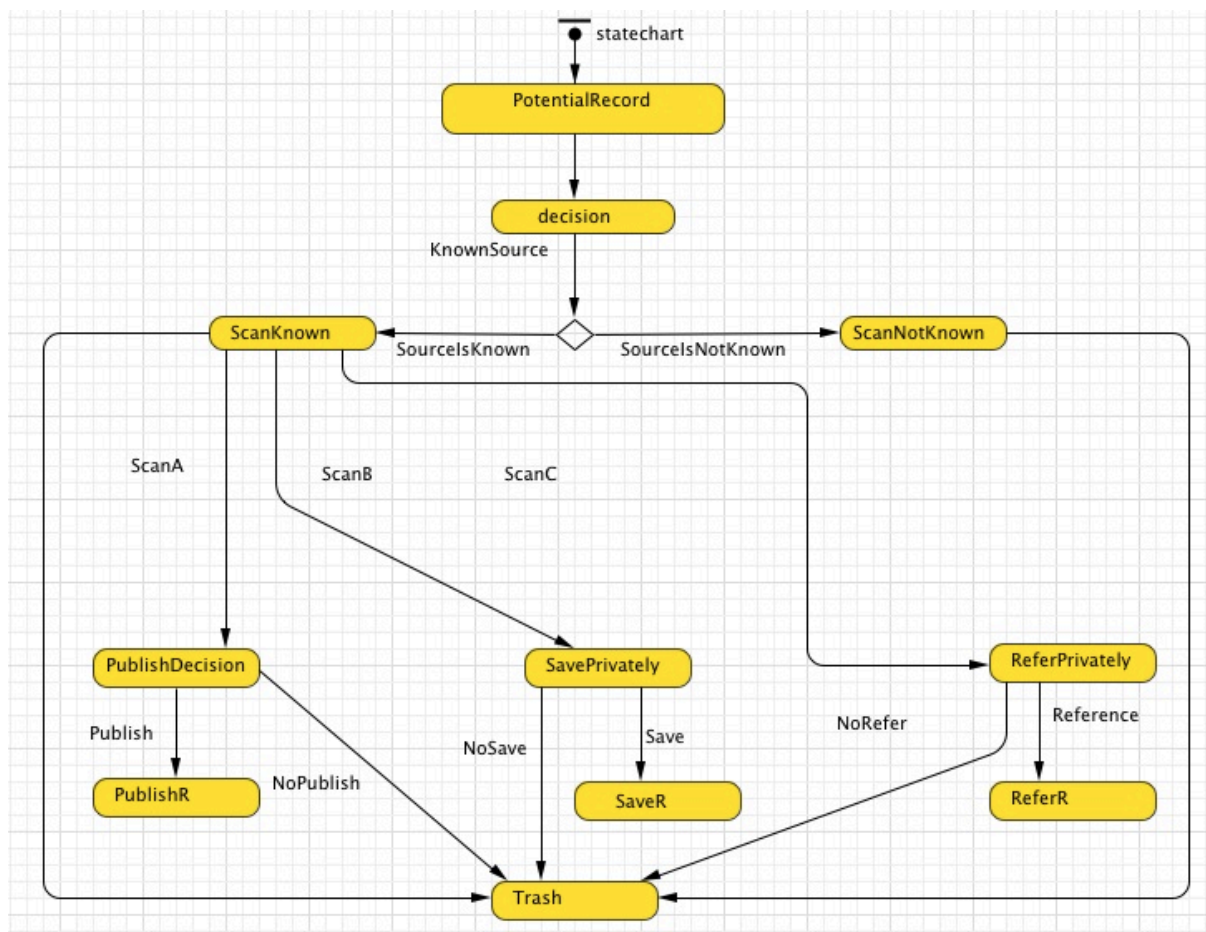
Figure 3. Flow Chart Curator Behavior
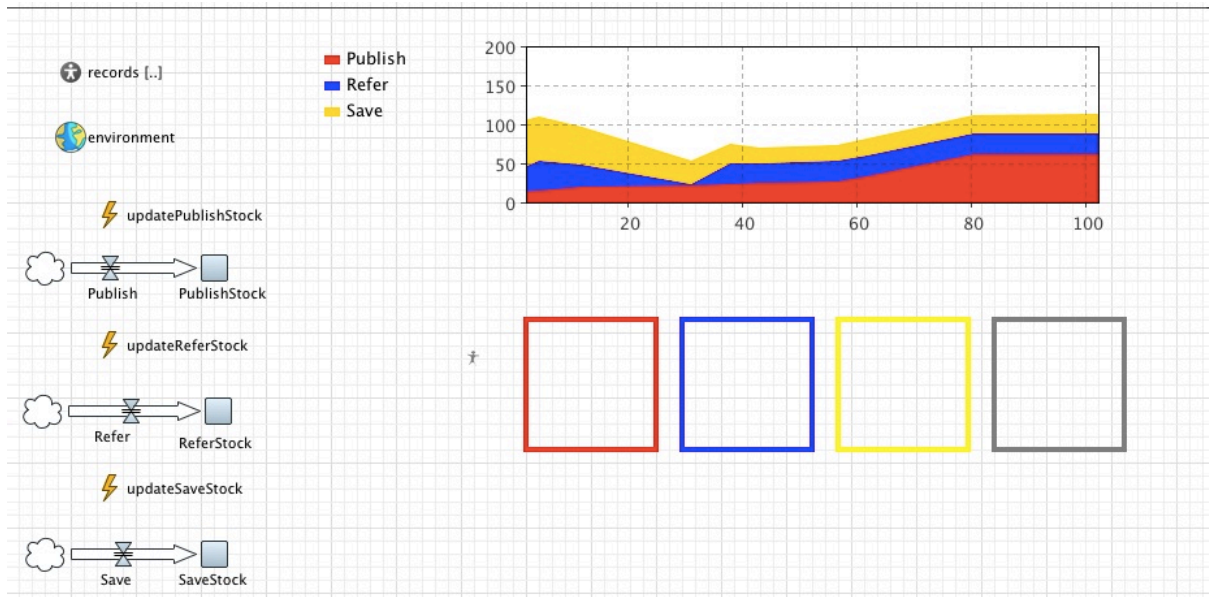
Figure 4. Curation Stream Stock and Flows

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Establishing Marketing and Changing an Organizational Culture through Social Media: A Pilot Study of a Hotel Organization

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Abstract: The hotel industry is in constant change, as new actors emerge on the market and make competition even harder. The role of the marketers is changing too; the social media communication channels have made it possible for new ways of communicating to emerge. This paper consists of a first pilot study of what may eventually result in a PhD thesis. The purpose of the pilot study is to identify and explore how hotel organizations establish their social media marketing and how their organizational culture can be changed by using social media. For this purpose, qualitative methods have been used. Firstly, in-depth interviews were carried out with managers at a hotel organization in Sweden. Secondly, the interviews were qualitatively analyzed. The findings are related to organizational culture, social media marketing and hotel organizations.

Keywords: social media, marketing, hotel organization, organizational culture

1. Introduction

Social media is a phenomenon that has changed the tourism and hospitality system considerably. Within the field of tourism and hospitality research, it has been widely discussed how hotel managers organize the hotels' usage of social media and what role social media plays in a traveler's choice of hotel (Sigala et al 2012). The usage of social media among travelers has given the hotels the great opportunity of being able to find out what their guests do and do not like about them (Dellarocas (2003). The hotel industry started using social media as part of their marketing rather late compared to e.g. banks and airline companies (Sigala et al 2012). According to Aguila-Obra (2006) and Sigala et al (2012), one reason for this is that there are still some uncertainties about what ROI (return on investment) the hotels could expect by implementing social media in their organizations. There is also a lack of management knowledge of social media (Singh & Munjal 2012).

The hotel industry is in constant change. As new actors emerge, the hotels can no longer afford to simply offer their customers a bed to sleep in. Rather, they have to increase their efforts in order to be able to offer the customers a positive experience. It is characteristic for the hotel industry that its assets consist mainly of its workforce. The hotel employees are the ones who create the direct service interaction with the customers, which means that their knowledge and personal competence are highly relevant to the ability of an organization to achieve its goals (Lindmark & Önnevik 2012). Social media has become a positive asset for marketing the hotel and tourism industry. The information spread in social media reach people from all parts of the world, and it is appreciated by travelers as it helps them fulfill their needs (O'Connor 2008, Nga & Basat 2011). Since the hotel industry is sensitive to trends, due to the high competition and the customers' extreme flexibility, social media marketing has become of great importance in establishing long-lasting customer relationships (Nga & Basat 2011). A great amount of the marketing efforts are focused on establishing and maintaining relationships with the customers in order to make them wanting to return (Phillips, 2007, Grönroos 2007). Since the introduction of web 2.0, social media has become a natural part of our daily lives. We interact, communicate and share thoughts and information online in social media, which can thus be described as a digital communication platform (Briscoe, 2009; Kaplan & Haenlein, 2010 Scott, 2007). The usage of social media has also rapidly changed the arena for marketing, and those changes can be described as a paradigm shift. Traditional marketing, which is focused on one-way communication, is replaced with a more informal and personal digital two-way type of communication.

The digital marketing channels have created an opportunity for marketers and organizations to develop a deeper relationship with their customers (Cook 2008). By commenting and spreading the word, like a digital word-of-mouth, the receiver has become a co-producer of the content of the social media marketing channels (Lester 2012). Since the receiver takes part in creating the message, a value fusion of social media marketing can be created, which generates value for a network consisting of both customers and organizations (Lindmark & Önnevik 2012). The messages published in social media do not just market the organization and its brand, but can also be seen as a tool for establishing the organizational culture. Values are spread via social media, and the messages are not just received by the customers, but also by the hotel staff. Therefore, the new ways

of communicating through social media have changed how the hotel organization market itself, but also the marketer's work description and the content of the messages that are sent out from the organization. In addition, there is the new opportunity to have a dialogue with the receiver. Hence, there is a need for new knowledge both among marketers and other social media co-workers. The messages that organizations send out using social media can be used not only as a marketing tool, but also as an establisher of an organizational culture and its values (Munar 2010).

2. Purpose and Research Questions

This is a pilot study related to my PhD thesis. The aim of this study is to identify and explore how marketing through social media is established within the hotel organization studied in the case study and to investigate how the organizational culture is changed through social media.

There is a gap in the research on the hotel industry and its implementation of social media marketing (Nga & Basat 2011, Munar 2012, Sigala et al 2012. The findings of this pilot study, and, moreover, the findings of a future PhD thesis, may serve as a valuable source of understanding how social media marketing can be established and used in the most efficient way within the hotel industry.

The paper is structured as follows: Firstly, I will discuss three theoretical inputs: social media marketing, the hotel organization and organizational culture. Secondly, I will present the methodology and give a short presentation of the hotel. Thirdly, I will present my findings, and then, finally, I will analyze my results in a discussion and present my conclusions.

3. Methodology

This study is a pilot study of a hotel organization in Sweden. Since the hotel wishes to stay anonymous, I will refer to it as 'the Sapphire Hotel'. The study was carried out in order to be able to look into the possibilities of writing a PhD thesis within the research fields of social media marketing, organizational culture, organizational learning and the hotel industry. The Sapphire Hotel organization was chosen for this study for two reasons; firstly because it is a brand new hotel which opened up in 2013, and secondly because it is part of a large hotel chain which just recently started to use social media marketing.

Qualitative methods have been used for this study, which means that four interviews were carried out with hotel managers and marketing managers at the Sapphire Hotel. The interviews took place from may 2013 to february 2014 and were semi-structured. Each interview lasted for approximately one hour and was recorded and later transcribed (Bryman & Bell 2008). The subjects dealt with in the interviews were focused on the usage of social media and marketing within the hotel organization. A qualitative analysis has been used for the analysis of the material collected during the interviews..

4. Background and Theoretical Perspectives

This study focuses on the newly built Sapphire Hotel in Sweden. This hotel has not only faced the challenge of marketing and establishing itself in a competitive industry; moreover, the hotel management wanted to use social media in order to change the organizational culture.

5. Social Media Marketing

The use of social media as a marketing platform has become increasingly popular (Lindmark & Önnevik 2012). Marketing in social media is based on relationships and communication between individuals online. Traditional marketing does not offer the receiver of a marketing message the opportunity to answer the message (Grönroos 2007). Within social media, on the other hand, a possibility for two-way communication within a marketing situation has been developed. The receiver can nowadays be described as a co-producer who comments, spreads and creates messages in social media together with the specific organization. By marketing the brand or organization in social media, a relationship between sender and receiver can be created and maintained (Holmström & Wikberg 2010). The development of digital marketing has not only given the consumers a new position; furthermore, the new channels and new technology put a greater demand on the marketer, but also on the other employees of the organization. The employees must learn how to use new technology, but they also need to understand what kind of messages that is appropriate to publish in social media. The usage of social media within an organization requires responsible employees who are aware of what values and messages the organization finds relevant and desirable to spread. As a result of this new way

of marketing a brand and its values, the role of the marketer has developed. To use social media marketing has become a phenomena in all sorts of business lines. While many organizations and companies did start to market themselves in social media in the early days of web 2.0, there is still a large number of companies that have fallen behind. In order for companies to use social media marketing effectively, it is important for them to understand how interaction in social media works and how their competitors perform in social media (Nga & Basat 2011).

6. The Organizational Culture

The organizational culture and its basic values pervade an entire organization. It consists of both visible and non-visible components. Visible components of an organizational culture might for example consist of interior design and dress codes, whereas non-visible components might consist of a certain feeling or spirit within the organization (Alvesson 2010, Schein 2010). An organizational culture originates from three sources: the founder's values, the staff's knowledge and new values which newly employed members of the staff have brought with them (Schein 2010). It can be difficult to notice an organizational culture, since it often encircles processes of which the staff and management are unaware. An organizational culture can be identified when the behavior of the members of the organization in question is identified. In order to be able to discuss an organizational culture, the group or organization itself has to be stable, which is why it can be difficult to discuss organizational cultures in relation to organizations with a high employee turnover (Clegg et al. 2008). Older members of an organization teach new members how to act according to their organizational culture ans this is an important socialization process. The founder and the managers of an organization do not only choose their co-workers; they can also construct organizational goals and values. In addition, the managers become cultural carriers who spread and establish their organizational culture (Schein 2010). The managers' ways of acting and what they notice and emphasize are crucial for the establishment of an organizational culture, but the managers' choices concerning what not to highlight do also matter.

The organizational culture within hotels is unique, since the product they deliver is not physical but consists of service provided by the hotel staff. Although a hotel consists of different departments, like a restaurant, a lobby and room service, together they create a unity that the guests evaluate as a whole. Therefore, the way the hotel service is carried out by the hotel staff is crucial (Dawson 2011).

7. Findings

7.1 Social Media Marketing Management

The usage of social media as a marketing tool is relatively new within the hotel chain which the Sapphire Hotel belongs to. It used to be strictly forbidden within the hotel chain to use social media for this purpose, but this was changed in 2011. By then, a social media marketing manager was introduced, whose task is to organize and manage the usage of social media for marketing purposes within the hotel chain. The main responsibilities of the social media manager are to provide education and policies related to the usage of social media. The Sapphire Hotel uses Facebook and Instagram as their social media marketing channels. Before the hotel was even built, the Sapphire Hotel managers created a Facebook account as a starting signal to tell the market about the upcoming hotel. This gave their Facebook followers the opportunity to follow the building process, which was an important way of establishing a relationship with future guests.

> *"It has been a challenge to bring structure [into the social media usage]. Initially, we had a lot of different social media activities, and bringing them together to one [type of activity] is of course a good thing which is both challenging and interesting. If you are going to start something up from the very beginning, there has to be progress and things can always be improved." [Social media manager]*

The marketing manager at the Sapphire Hotel and one other member of the marketing staff are the only ones who are allowed to use the social media accounts belonging to the hotel. Other staff members are not allowed to mention the hotel in their private social media channels and they are encouraged not to comment or 'like' posts on the hotel's Facebook wall.

> *"Honestly, [...] if you look into who is watching the hotel Facebook page, how many of those are related to the hotel staff and how many are guests and customers? I am not sure whether or not it is just us, the hotel staff, who are 'liking' one another's Facebook posts. Generally, I think*

Facebook is a bit like that: about mutual admiration. I think you have to post a very interesting message if you want other people to like your posts." [The Sapphire Hotel manager]

The posts published on Facebook and Instagram are usually well-organized and planned, although the hotel marketing manager also tries to catch spontaneous moments of everyday life at the hotel. Members of the staff are welcome to suggest subjects and to take pictures for Facebook and Instagram, but they are not allowed to publish these pictures by themselves.

"We are currently rewriting our social media policy, and we are looking into a new direction, as we need to be more open-minded. We cannot afford to be too restrictive, because we know that people are already there [in social media channels], which means that if you do forbid the usage of them, you will get the opposite effect. Also, we have more and more young staff which means that the Generation Millennium works with us." [Social media manager]

8. Culture

The hotel management at the Sapphire Hotel is trying to use social media as a strategic instrument for establishing their organizational culture. Social media is used for spreading the hotel values but the management also finds it important to publish fun and inspiring pictures of everyday life at the hotel, in order to show both its staff and others that "we can be fun too". The purpose of this is to show another side of the hotel and its brand which is less formal and more personal.

"First of all, the language is very important. It should not be too strict. It should be youthful and personal, witty and fun to read! It is not the case that the staff cannot take a picture in the hotel, but they are not allowed to post it in social media. Instead, they can send it to us [marketing], and then we will make a quality assessment before posting it online. It is important what the pictures look like and the feeling that they convey; it has to be the same as the feeling in the hotel. And the language, it is so important! It should be short, well-formulated and to the point, so to speak." [Marketing manager at The Sapphire Hotel]

The usage of storytelling is at the core of all instances of social media marketing within the Sapphire Hotel. The aim is to produce stories that are appealing, interesting and exciting, but which also create the feeling of "a cosy home". Ingredients like humor and joy are crucial and therefore emphasized, along with the quality of the published pictures, which is why they are never published before the hotel marketing manager has seen them. Another important ingredient of the social media marketing is the use of the hotel restaurant as an illustration to show the hotel as a place where guests can meet and relax.

9. Evaluation and Trends

The knowledge that can be gathered via social media, such as what guests appreciate and not about the hotel, works as an evaluation instrument. New trends can be identified by reading comments and analyzing what posts the guests choose to spread and 'like' on Facebook. What the guests write about, comment on and 'like' is analyzed and used within the internal service education. Therefore, social media has also become an instrument for evaluating and improving the hotel service.

"I do not think you should take every negative comment into consideration. You have to look at the trends. You will always get bad comments. You should not underestimate the readers; they understand that a bad comment is just a bad comment. Look at your competitors; they get really bad comments too, the ones that you just do not want to get." [The Sapphire Hotel manager]

Daily reports about what has been said and commented on about the hotel in social media are distributed to the hotel managers by a computer program. Complaints made by customers in social media are taken seriously by the hotel management, however, the management do emphasize that they handle all complaints similarly, regardless of whether they are available for everyone to read online or have for example been emailed to the hotel.

It is not enough to use social media [as the only channel for] marketing. For example, very few people use Twitter […]. It is not something I would use for a hotel; it is just a channel that we have not tried to use. We [the hotel] do have a Twitter account but we are not using it." [The Sapphire Hotel manager]

The manager at the Sapphire Hotel is skeptical towards the amount of available social media channels, and he or she is unsure whether it is possible for the hotel to cover and understand them all. The hotel has chosen not to use Twitter or LinkedIn, since it would take too much time and effort to manage.

10. Discussion

It is clear that the Sapphire Hotel's use of social media, like Facebook, is not just a way of communicating with guests; it has also become an important tool for establishing the organizational culture within the hotel. The hotel manager uses social media as an instrument for changing the values connected with the hotel brand. He or she can be seen as a carrier of culture who demonstrates and establishes what behavior that is desirable, not only within the physical environment of the hotel, but also in social media (Schein 2010). The usage of social media marketing channels is also an evaluation tool for identifying trends and keeping an eye on rivaling hotels. Daily reports from software programs are received directly by the managers. By learning how other hotels market themselves, new knowledge can be obtained (Nga & Basat 2011). The daily reports also show how the hotel is discussed in social media and what is said about it. By gaining this knowledge about people's opinions about the hotel, the customers' needs can be identified and relations can be established and maintained (Lindmark & Önnevik 2012).

It is also clear that different interests and knowledge of social media among managers affect their usage of it (Singh & Munjal 2012). The Sapphire Hotel manager is rather skeptical towards social media and does not want to let go of traditional marketing such as printed media. This individual skepticism could affect both how social media is used within this hotel and the organizational culture which is carried by the manager. The social media manager, on the other hand, is convinced that the usage of social media as a marketing tool will grow larger and larger. This manager is therefore interested in learning more about what types of social media channels the younger generation likes. In this case, it is also interesting to notice who is allowed to use social media at the hotel. By only allowing the managers to publish posts in social media, the structure and hierarchy of the hotel can be said to be established and maintained (Alvesson 2010).

11. Conclusion

At the Sapphire Hotel, the establishment of social media marketing is highly connected with the establishment of the organizational culture. By having very restrictive rules about who is allowed to use social media for marketing purposes, the risk for mistakes to be made that might affect the brand or culture is reduced.

The hotel manager is crucial in establishing the organizational culture, and his/hers values and beliefs are highlighted and spread in social media. In the future, it would be interesting to study whether the implementation of social media at the hotel has moved into a second phase; perhaps one in which other employees are allowed to use social media, which might generate a more efficient usage (Nga & Basat 2011). In addition, it would also be relevant to interview the staff about the organizational culture, since they too participate in establishing and changing the organizational culture.

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Social Media Based Value Creation in Innovation Community in Mechanical Engineering Industry

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Abstract: Social media and crowdsourcing are becoming increasingly important not only for business-to-consumer (B2C) companies, in which context they have resulted in relatively large and fast-growing research body, but increasingly also to the development of business-to-business (B2B) products and innovations. However, academic research on the use of social media and crowdsourcing for the value creation of industrial companies and their new product development is almost non-existent. Compared to B2C companies, the B2Bs are e.g. challenged with far smaller number of customers and experts that could be utilised as crowdsourcing resources in innovation. B2Bs also face for instance various IPR and information security issues regarding product related knowledge. In addition, the development of complex industrial products often require large amounts of in-depth expertise and the crowdsourcing tasks may be very challenging in comparison to the usually simple tasks related to B2C and consumer crowdsourcing. The lack of understanding of social media in B2B context results in many restrictions and doubts related to B2B crowdsourcing. Novel systematic ways of value creation are needed in regard to the new product development (NPD) of B2B companies. In order to enable the crowdsourcing companies to efficiently make use of the crowdsourced ideas and concepts, it is essential to motivate the various different outside actors to share their needed in-depth expertise. In order to find out how social media and crowdsourcing can be used to create value for the development of complex B2B product in manufacturing industry, we selected a single case study research method. The selected single case represents a unique case regarding social media and crowdsourcing use in the development of complex B2B products. The data was collected in two stages - beginning with a netnographic participant observation in an online environment and followed by a semi-structured interview complementing and confirming the preliminary analysis. The interviews were based on the previously collected data. The analysis and collection of data occurred iteratively. In order to understand the overall patterns of value exchange and the value conversion between different actors, the case study data was analysed using Allee's Value Network Analysis method. The findings of the paper benefit manufacturing companies that are planning, designing, selecting and reviewing suitable social media based crowdsourcing communities to support their NPD. Manufacturing companies can learn from the case study and use it as a blueprint for their own crowdsourcing implementations, especially in the case of complex crowdsourcing tasks of industrial companies.

Keywords: social media, crowdsourcing, new product development, complex industrial B2B products, value creation, value network analysis

1. Introduction

Although social media and crowdsourcing are becoming increasingly important for business-to-business (B2B) innovation, very little research and understanding exists in how they could be used for value creation by industrial companies (Simula et al 2012; Simula and Ahola 2014). Compared to business-to-customer (B2C) companies, the use of social media and crowdsourcing in B2Bs is challenged e.g. with far smaller number of customers (Tickle et al 2011) and experts that could be utilised as crowdsourcing resources in innovation. B2Bs also face for instance various IPR and information security issues (Marjanovic et al 2012; Simula and Vuori 2012), especially regarding the product related knowledge. In addition, the lack of understanding of social media in B2B context results in many restrictions and doubts related to B2B crowdsourcing (e.g. Simula and Vuori 2012, Kärkkäinen et al. 2012). Being demonstrated by a small number of forerunner companies, B2B crowdsourcing is however possible (Kärkkäinen et al 2012; Jussila et al 2013).

Novel systematic ways of value creation are needed in regard to the new product development (NPD) of B2B companies, in order to a) motivate and engage various different outside actors (customers and various stakeholders) to share their expertise, knowledge and other resources for the benefit of the crowdsourcing companies and b) to enable the crowdsourcing companies to efficiently make use of the crowdsourced ideas and concepts. Compared to traditional crowdsourcing of simple ideas or other simple tasks, the crowdsourcing of complex products requires various different types of in-depth specialized expertise.

Aiming at understanding how social media based online communities can help to create value for the development of new complex business-to-business products in manufacturing industrial companies, our research questions are:

1. What were the different actors involved in the crowdsourcing task of a complex industrial B2B product, and what were their roles in the crowdsourcing challenge?
2. How was the crowdsourcing task of the complex industrial B2B product carried out and managed? (E.g. how was the crowdsourcing call formulated and the rules for the crowdsourcing challenge created? How was the crowdsourcing challenge monitored and how were the complex solutions, received from the crowdsourcing task, evaluated and adopted?)
3. How did the crowdsourcing case company benefit from the crowdsourcing task as a whole? (E.g. what was the quality of solutions they received? According to the Case Company´s own experience, what were the overall benefits they achieved from the crowdsourcing task?)

2. Current literature

Empirical studies related to the use of social media in B2B relationships (Michaelidou et al 2011; Zaki et al 2013), and especially the development of new industrial B2B products, are rare (Jussila et al 2012; Kärkkäinen et al 2013). Further, empirical research concerning the use of crowdsourcing in B2B companies, and in particular in using crowdsourcing in the development of complex industrial products, is practically non-existing (Kärkkäinen et al 2012; Jussila et al 2013; Simula and Ahola 2014). In addition, explicit and concrete academic descriptions and analyses of how the above types of cases have been carried out, e.g. by means of value creation or value transaction analyses, were not found in the existing literature.

The concept of value has been debated for over 2000 years and there is no universally agreed consensus on the concept – the debate continues both in academic and in business domains. Edvardsson et al. (2011) argue that value has a collective and intersubjective dimension and should be understood as value-in-social-context. While studying the NPD of a B2B manufacturing company co-creating value in an innovation community, the context can be viewed as a service system (Vargo 2009) or as a social system (Edvardsson et al 2011). In the social system the innovation community forms a social network between the parties involved, like represented in our case study: The Case Company´s Chain Wear Challenge at GrabCAD´s online community.

In a context of networks, it is especially fruitful to view value from the perspective of different kinds of exchanges. According to Allee (2009), the exchanges can provide a more dynamic and profound picture of the network than what could be achieved e.g. through a mere social network analysis. In fact, Allee´s (2008; 2009) value network analysis (VNA) is based on the identification of different exchanges and on the modelling of the complex value flows and human collaborations thereby discovered. Enabled by the visualisation of tangibles and intangibles, the VNA consists of both impact and value creation analysis.

The exchanges in the network are carried out between the different actors, and the value is being created through both monetary and non-monetary benefits and sacrifices (see e.g. Gummerus 2013). As being presented by Allee (2000), the exchanges in the value networks can be divided as follows: 1) material exchanges such as goods, services, and revenue, mostly easier to measure in monetary means, 2) knowledge, and 3) other intangible benefits, not directly beneficial in the financial sense. These exchange groupings are further utilised in the VNA process, where first the actors and their roles are being identified, and then the exchanges of tangibles and intangibles are analysed. In the VNA modelling, the nodes represent participants and the roles they play. Furthermore, in the VNA illustration the solid lines between the actors show tangible, formal or contractual deliverable exchanges between the actors, whereas the dashed lines show intangible or informal value being provided by the actors (see e.g. Allee 2009). Besides the identification of the actors, their roles and the tangible and/or intangible exchanges between them, an impact analysis is included in the VNA process. Through analysing the trade-offs of benefits and sacrifices, the impact analysis opens up the created value to each of the actors.

3. Methodology

In general, case studies are useful for investigating contemporary phenomena within their real-life context (see e.g. Yin 2003). As what comes to the selected case, it represents an interesting exploration on how social media and crowdsourcing can be used to support the internal NPD process of a B2B manufacturing company.

In our case, the unit of analysis is the crowdsourcing initiative (i.e. the Chain Wear Challenge) implemented on an online crowdsourcing platform (i.e. the GrabCAD Community) within the context of B2B manufacturing company's (i.e. the Case Company) internal NPD process. Considering the findings of our literature review, this research is to be considered pioneering in the field of social media based value creation in online communities.

The data was collected in two stages - beginning with netnographic (Kozinets 2010) participant observation in an online environment (i.e. online crowdsourcing platform and community), and followed by a semi-structured interview complementing and confirming the preliminary analysis based on the previously collected data. Thus the analysis and collection of data occurred iteratively. The data collected with participant observation from the online environment included publicly available information only. It represented direct copies and screen captures from interactions between the users on the GrabCAD platform. All personal details were removed from the collected data to guarantee the anonymity of the users. All together, we took nearly 280 screen captures, downloaded all 44 entries (i.e. CAD designs) posted for the challenge, and analysed 980 separate lines of text. The semi-structured interview was held with Case Company's engineering director, based on a preliminary analysis that was generated from the netnographic data. The interview last about 80 minutes and it was documented making notes during the session.

The case study data was analysed using parts of Allee's (see e.g. Allee 2008) Value Network Analysis. In order to understand the overall patterns of value exchange and the value conversion between different actors (Allee 2008) in our case study, we first created a visualisation of the most important actors and value transactions occurring in the value network (i.e. exchange analysis). Second, we examined both the activities generated and impacts caused by the transactions in regards to the research questions of the study. During the analysis, we did not focus on conversing tangible and intangible assets, but we took a more general stance towards examining the value conversion from the Case Company's viewpoint.

4. Case study

In this section we discuss the selected case and the results and analysis of the case study. First, we outline the case context by introducing the case organization and explaining the crowdsourcing initiative. Second, we discuss our analysis based on the collected data and the selected analysis framework.

4.1 Case study context

The focus of this paper is on the Case Company, a globally leading overhead crane manufacturer and provider of lifting solutions and service network, and on how they used crowdsourcing in creating value for their new product development. The Chain Wear Challenge was held on GrabCAD´s online platform from 30th October 2012 to 15th of January 2013. Representing an online community of over one million engineers and 300,000 uploaded CAD designs, GrabCAD offers an open source CAD-library, a toolbox of industrial and mechanical design tools, a collaborative tool for editing and sharing as well as competitions, and is therefore an ideal platform for crowdsourcing for a mechanical engineering company.

The Case Company operates in 48 countries with over 12,000 employees. The case study focuses on the Case Company´s initiative to use crowdsourcing in innovating and developing an indicator for detecting chain wear in a chain hoist. The Chain Wear Challenge was a very concrete yet professionally demanding task, representing a functionality that has effects to the security of the Case Company´s lifting products. It was a task to be done in the long run, but the Case Company had only little resources to allocate for it.

As a concrete result of the Chain Wear Challenge, all together 44 solutions were created and 6 of them were awarded with monetary or product prices. The jury consisted of both the Case Company´s and GrabCADs employees.

4.2 Results and analysis

In the Figure 1 we have described the major actors in regard to the crowdsourcing, evaluation and adoption of the crowdsourced complex solutions. The major actors influencing the above are described as nodes in the figure. The most important transactions from the perspective of our research questions are illustrated by arrows. Solid lines represent tangible transactions and dashed lines represent intangible transactions in the value network.
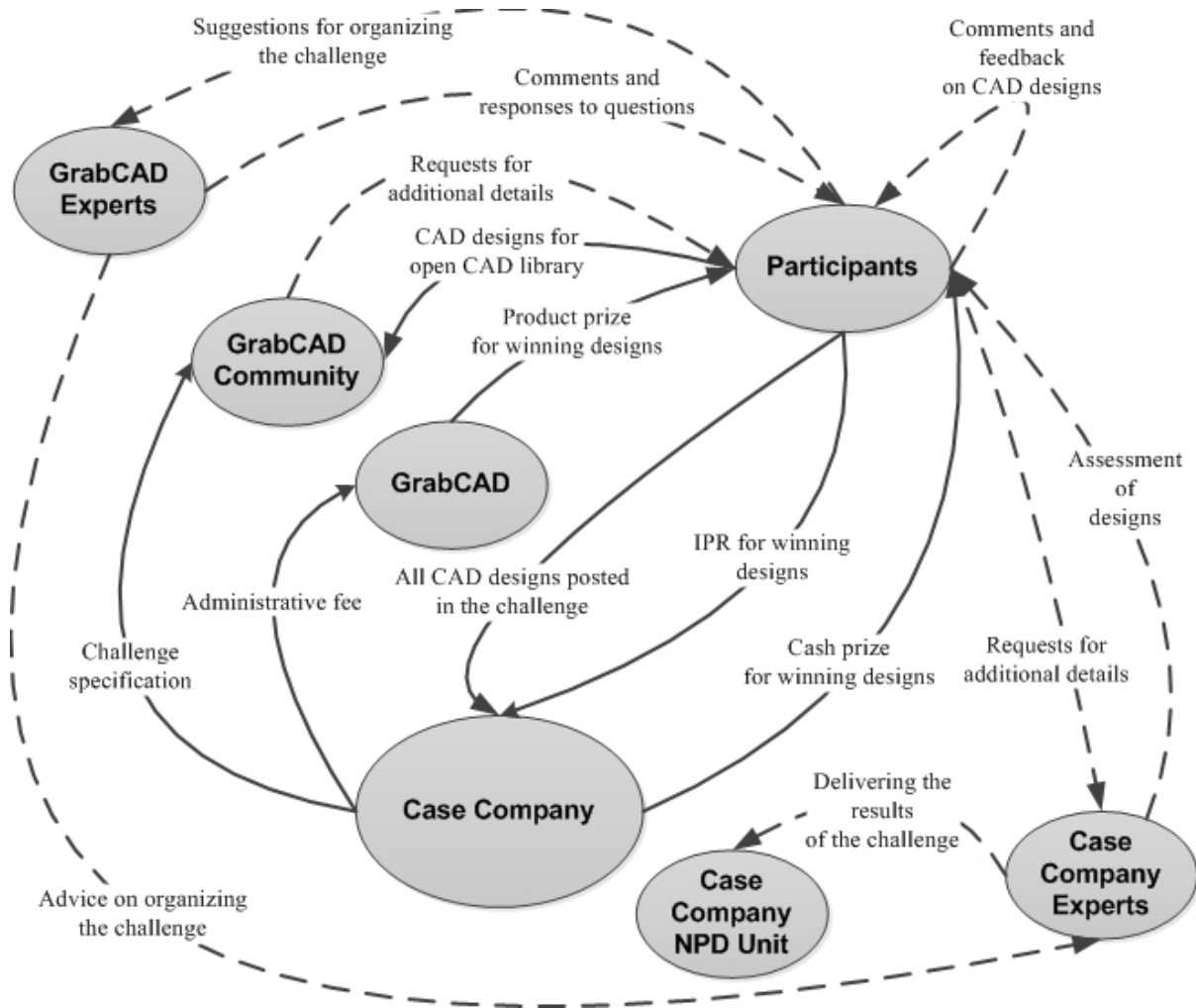
Figure 1: The value transactions identified in Case Company´s crowdsourcing task of a complex industrial B2B product.

We identified several different actors involved in the crowdsourcing challenge and in the evaluation and adoption of the complex crowdsourced solutions into Case Company's internal product development: GrabCAD Experts, GrabCAD (the company), Case Company Experts, Case Company, Participants and Community Members.

The Case Company had few direct contacts with the Participants during the challenge. Most of the transactions appear either between the Participants (i.e. the engineers in the online community) or between the Participants and Community Members or GrabCAD Experts.

The main interest lies in understanding the systemic nature of the transactions in the crowdsourcing of complex solutions. For instance, the GrabCAD Experts were monitoring the quality of the complex solutions (concepts) during the challenge, confirming that the concepts matched the goals set by the Case Company. As a result of monitoring the concepts, the challenge rules were modified during the contest to better steer the concepts towards the Case Company goals. This and other impacts of the transactions are next analysed in more detail in transaction and impact analysis (Table 1).

As we can see from Table 1, the synergistic impact of tangible and intangible transactions leads us to a new level of understanding the interdependencies of the different actors in the crowdsourcing process: The

multilateral comments and discussions at the open community platform resulted in re-specification of the crowdsourcing challenge rules and in updates of the challenge related information – potentially increasing the quality of results. Due to the complexity of the crowdsourcing task, it was not possible to fully determine the challenge specifications and rules before publishing the crowdsourcing call, even despite the close cooperation between the GrabCAD experts and the Case Company experts. The role of GrabCAD is thus highlighted not only as technical platform owner, but as an important facilitator and a value adding link between the Case Company and the CAD engineers taking part in the Chain Wear Challenge. In terms of the Chain Wear Challenge the value creation was significantly systemic.

Table 1: The most essential transactions and their impact on the Case Company's new product development.

		Transaction analysis		Impact analysis
	Deliverables	**From**	**To**	**1) Activities generated** **2) Impacts caused by transactions**
Tangible	Administrative fee	Case Company	GrabCAD	1) Payment for hosting the challenge on GrabCAD platform (i.e. outsourcing the challenge related coordination and facilitation) 2) Financial expenses
	Challenge specification and rules	Case Company	GrabCAD Community	1) Publishing the challenge on GrabCAD platform 2) Enabling participants to produce relevant results for Case Company; Risk of revealing important NPD information publicly
	All entries	Participant	GrabCAD, Case Company	1) Reviewing and assessing of all entries (i.e. deciding the winners) 2) (Novel) ideas for product development
	Winning entries	Participant	Case Company	1) Developing and delivering the results of both internal and external challenges to product development sprints 2) Full IPR of winning designs and ideas for product development
	Cash prize	Case Company	Participant	1) Rewarding challenge winners (places 1-3) 2) Financial expenses worth $6,000 in total
	Product prize (GrabCAD T-shirt)	GrabCAD	Participant	1) Rewarding challenge winners (places 4-6) 2) -
Intangible	Advice on organizing the challenge	GrabCAD Expert	Case Company Expert	1) Designing the rules of the challenge and modifying them during the challenge 2) Increased probability that the results match better the needs of Case Company's NPD
	Comments and feedback on CAD designs	Participant	Participant	1) Discussions and collaboration between participants 2) Enhances the potential of collaboration between the participants and thus also the quality of CAD designs in the challenge
	Requests for additional details	GrabCAD Community	Participant	1) Responding to questions and modification of CAD designs 2) Enhanced quality of CAD designs in the challenge
	Comments and responses to questions	GrabCAD Expert	Participant	1) Coordinating the challenge 2) Improved challenge execution
	Suggestions for organizing the challenge (during and after the challenge)	Participant	GrabCAD Expert	1) Specifying the challenge rules 2) Increasing the probability of better results; Potential information for implementing a similar

				challenge in the future (lessons learned)
	Delivering the results of the external challenge to NPD	Case Company Expert	Case Company NPD Unit	1) Integrating external crowdsourcing challenge resources to internal product development 2) Speeding and improving the quality of internal NPD

Transaction and impact analysis were made by categorising the most essential transactions into tangibles and intangibles. If we take a look at the tangibles only, the impacts seem relatively obvious and predictable: As Case Company decided to pay for the use of GrabCAD´s online community platform and to reward the best idea propositions with cash prizes, it was able to outsource the coordination of the challenge and to save time-related resources of their experts. On the other hand, they took a risk of revealing some of their important NPD information publicly, also to their competitors, and in return, received (novel) ideas and concepts for their internal product development and the full IPRs of the winning entries.

As Case Company paid GrabCAD for the platform use and management, it was able to reach skillful designers and run the challenge instantly with relatively small monetary investments. For Case Company, the main value of the process was in getting new, fresh ideas and concepts for their product development, but they also gained brand awareness and visibility through the platform.

5. Discussion and Conclusions

Regarding the first research question, we were able to identify the different major actors involved in the crowdsourcing task of a complex industrial B2B product, as well as the roles they played in the crowdsourcing challenge. Through means of netnography we identified GrabCAD, GrabCAD Community, GrabCAD Experts, Participants, Case Company, and Case Company Experts as key roles in the crowdsourcing challenge. GrabCAD Experts role was coordinating the challenge and facilitating discussions and collaboration between the Participants.

Together with netnogtraphic observation and the utilisation of value transaction analysis methods, we were able to make useful presumptions concerning the value creation in the crowdsourcing value system. By interviewing the Case Company representative we were able to confirm our preliminary findings, but were also able to identify additional actors and more detailed roles of the actors in the crowdsourcing challenge that were not possible to be determined by means of netnographic observation only. We discovered that the expertise and experience of GrabCAD Experts had an important role also in formulating the complex crowdsourcing task and in adapting the challenge rules to meet the Case Company´s goals. As an additional major actor, we identified that the Case Company's NPD Unit played a key role in integrating the external resources of the crowdsourcing challenge to the product development of the complex industrial end product of the company.

Regarding the second research question, we discovered several issues that were important for carrying out and managing the crowdsourcing task of the complex industrial B2B product. First, especially important when dealing with a complex industrial product, the Case Company used the expertise and experience of GrabCAD Experts in formulating the crowdsourcing call and challenge rules to improve the probability of quality of ideas from the Participants in the GrabCAD Community. Second, the quality of concepts was monitored by GrabCAD Experts during the challenge to determine if the concepts matched the goals set by the Company. Based on the feedback, the challenge rules were modified during the contest to better steer the concepts toward the Case Company goals.

By organizing a simultaneous internal crowdsourcing challenge the Case Company was able to create absorptive capacity (see Cohen and Levinthal 1990) to quickly integrate the crowdsourced external resources and complex solutions from the crowdsourcing community into their own product development process and the end product. It made it easier to evaluate and assess the usefulness of the concepts created by the Participants, and to adopt the crowdsourced concepts into the further development of the ideas in their product development process more quickly. The Case Company would probably have not been able to properly evaluate and adopt the solutions without the increased absorptive capacity, due to their technical complexity and novelty.

Concerning the third research question, the Case Company´s perspective, the Chain Wear Challenge was experienced as successful. First, it demonstrated that crowdsourcing can be successfully utilised in the new product development of a complex and various in-depth expertise demanding industrial engineering challenge. Although the challenge did not provide the Case Company with fully ready-to-use concepts, the company was able to integrate the external resources quite usefully into their in-house product development. Financially, the Case Company estimated that the Chain Wear Challenge cost them about half of the cost compared to them developing it fully by themselves. Importantly, the Case Company expressed that it would probably have taken them around couple of more years to develop this specific component fully by merely in-house development resources. Other benefits included "fresh viewpoints from heterogeneous crowds" and positive brand awareness and publicity because of the openness of the challenge.

The studied crowdsourcing platform supported product development with several Enterprise 2.0 and social media features, such as first, to reach and to properly allow the participation of experts in the crowdsourcing community of more than 900,000 professionals from different industries, and second, to support the provision of useful feedback from crowdsourced solutions by both other community members and the product development professionals of the crowdsourcing manufacturing company.

The findings of the paper benefit manufacturing companies that are planning, designing, selecting and reviewing suitable social media based crowdsourcing communities to support their NPD. Manufacturing companies can learn from the case study and use it as a blueprint for their own crowdsourcing implementations, especially in the case of complex crowdsourcing tasks of industrial companies.

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Studying Social Micro-worlds as Personal Learning Environments

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Abstract: More than 30 years ago, Seymour Papert formulated his innovative approach to learning as Constructionism, contradicting to the previous approach, which could be called Instructionism. Papert said: "Constructionism and Instructionism are names for two approaches to educational innovation. Instructionism is the theory that says: To get better education, we must improve instruction. Constructionism means: Giving children good things to do so that they can learn by doing much better than they could before. According to the Constructionism principles, the student builds his own micro-world, in which he implements his own cognitive abilities. In contrast, the instructionism is associated with the centralized education and with orientation on the content providing by a central source. Both the instructionism and the constructionism were evolving concurrently during the last three decades, and have thus defined the present situation in the field of learning environments. Today, the brightest example of the instructional approach is known as Massive open on-line courses (MOOCs), which can be considered as a web-based implementation of the original instructional idea. The recent progress of the modern society is linked with the rapid growth of various communication means and, as a result, with unprecedented socialization. Under these circumstances, the Papert's concept of private micro-worlds can be updated, namely these micro-worlds should now include a new, social dimension in their structure. Introducing the social dimension into the concept of personal micro-worlds enriches the constructionist approach and, in turn, gives birth to a new concept of the personal learning environment. The personal micro-world mutates into a so-called social personal micro-world of a networked person. Such social micro-worlds can be seen in the form of various social networks, blogs, Web 2.0 means, etc. The main goal of our research in progress is to study regularities and patterns in the process of designing by students of their social micro-worlds. We observe a group of students from a teachers' training course. The first hypothesis of our study is that a social micro-world can be considered as comprising a set of blocks interconnected according to some rules and corresponding to various channels (blogs, forums, cloud storage, events, content providers etc.). Among these channels there are: Facebook, Wikipedia, YouTube, Dropbox, Evernote, etc. By connecting the blocks, a student creates his/her personal unique social micro-world. The student makes it by means of a so-called mash-up, which arranges the combined functioning of the above blocks. We use a popular mash-up If-This-Then-That (IFTTT) that specifies a set of rules. The student forms his/her set of rules during creating his/her social personal micro-world. The second hypothesis of the study is an idea that the structure and the content of the IFTTT rules contain information about the networked student's behaviour both in general, and the students' Personal Identity On-line in particular. The study of both of the above hypotheses is reflected in a so-called Traffic Pattern, as well as in interviews, which clarify the students' epistemic beliefs about new learning within social personal micro-worlds.

Keywords: Personal Learning Environment, Constructionism, Micro-world, Social micro-worlds, mash-up, Personal Identity On-line

1. Introduction

More than 30 years ago, Seymour Papert formulated his innovative approach to learning, which he termed Constructionism (Papert, 1980), contradicting the previous approach, which could be termed Instructionism. Papert stated: "Constructionism and Instructionism are names for two approaches to educational innovation. Instructionism is the theory that says: To get better education, we must improve instruction. Constructionism means: Giving children good things to do so that they can learn by doing much better than they could before."

According to the principles of Constructionism, the student builds his own micro-world in which he implements his own cognitive abilities. In contrast, instructionism is associated with centralized education and with orientation toward the content by providing a central source. Both instructionism and constructionism evolved concurrently during the last three decades, and have thus defined the present situation in the field of learning environments. Today, the best example of the instructional approach is known as Massive open on-line courses (MOOCs), which can be considered as a web-based implementation of the original instructional idea. The constructionist idea has developed into the Personal Learning Environment (PLE) approach (Mödritscher, 2010), which also widely uses all the modern innovations, especially Web 2.0 technologies and Social Networks.

When comparing the original Constructionism with the recently adapted one, we have to take into account the phenomenon of the Digital Revolution, which took place during this period. The transition of our society to the

Digital epoch serves as an initial point of our study. The digital society has created new ways of human interaction with the natural environment, where artificial interfaces separate individuals from the real world and the distinction between reality and virtuality is blurred (Ivanov, 2006). Under such new conditions, the constructionist idea should be updated. Indeed, the original idea is strongly connected with personalization and even isolation of an artificial micro-world. In contrast, recent micro-worlds built within the Web 2.0-based environment are hybrid micro-worlds that include both traditional artificial components and natural components corresponding to their interaction with the web and different users around the world. In other words, the up-to-date learning environment has become not just personal, which was its main feature before, but increasingly more social, which is the main feature of the recent digital world.

Accordingly, the main objectives of education must now be reconsidered to reflect these tendencies. The most critical point of the newly conceived educational process is the new role of the teacher and the learner (Carolyn & Foster, 2010; Fazal, DeSimone & Lieman, 2010). The teacher is not a single content provider any more. Consequently, the learner becomes increasingly freer to collect knowledge as needed.

Moreover, the latest information and communication technology achievements (wireless broadband, IP, cloud computing, Web 2.0, etc.) have transformed the learning process by making it ubiquitous, which includes supporting the learner's mobility and relaxing the previous strong requirement for learning in a formal class (Dede, 2011).

Our study deals with an up-to-date web-based ubiquitous learning environment (Graf & Kinshuk, 2008). We hypothesize that since such an environment is constructed according to constructionist principles, it reflects the main tendency of the digital world – its social character.

2. Towards Achieving Social Personal Micro-worlds

One of the main features of the educational system of an aspiring industrial society is its social orientation toward formalization and standardization. Concepts such as a formal curriculum, a formal class, and formal lessons were established in the Age of Enlightenment. The classroom-lesson educational system was highly efficient for civil society during the industrial epoch. This system unified and standardized relations between teachers and students and defined the social role of the teacher both in schools and in society. In contrast, education of post-industrial society has undergone a new process in fulfilling the teacher's role (Huber, 1984). This is manifested by the self-learning activity of today's students, who have ubiquitous access to information, in which the teacher is no longer the unique content provider. In post-industrial schools, the classic classroom-lesson system loses its usual significance. The ubiquitous manner of acquiring knowledge changes the conventional meaning of the traditional classroom. We refer to this new type of classroom as a ubiquitous classroom.

2.1 Personal Micro-worlds in a Post-industrial Class

Obviously, original constructionist ideas that strongly correspond to personalization are in conflict with the conventional classroom-based educational process. Papert and his followers perceived the classroom-based system as an obstacle to social progress and as contradicting the fundamental principles of cognition (Papert, 1991). Naturally, this brings to mind a dichotomous view in which society is divided into two portions: 1) conservative, based on a classroom-oriented system, the centralized curriculum, the authoritarian teacher, the omnipotence of the Ministry of Education, and 2) progressive, having students at the centre and symbolizing the rejection of centralism and based on the principle of individualism.

Papert and his followers consider the new liberal school as based on the principles of constructionism (Harel & Papert, 1991; Cakir, 2008). According to these principles, the student builds his own micro-world, in which he implements his own cognitive abilities. In this way, the idea of decentralization and individualization has merged with the ideas of progress, freedom, and creativity. In contrast, the old, classroom-oriented system was associated with centralized authoritarian education that does not take into account the individual student. At the same time, the idea of constructionism was fundamentally related to the use of computers in the classroom. The computer has played a revolutionary role in the constructionist approach, radically changing classroom-based education.

The personal micro-worlds are of major importance, since a student studies the surrounding world when operating in his personal micro-world. Nevertheless, the growth of the personal component in the educational process proceeds concomitantly with a significant reduction in the role of the social component of education. One of the important points of our study lies in understanding the fact that such a highly individualized educational process does not correspond enough to the needs and tendencies of post-industrial society (Huber, 1984). Neglecting the social component in favour of the personal component, although it constitutes the core idea, poses a serious problem. A new society is linked to rapid growth of communications and as a result, with unprecedented socialization. Under these circumstances, private individual micro-worlds that have generated such an impressive breakthrough in the 1980s inevitably have to be transformed into social micro-worlds, though they must also remain personal. Such social micro-worlds can now be seen in the form of various social networks, blogs, Web 2.0 means, etc., which have changed the life styles of millions of people and have become increasingly popular in our daily life. The relationships of our personal and social lives are rapidly changing, which, in turn, affects education both at the level of the educational process and at the level of learning environments.

Digital curation is one of the best examples of personal social micro-worlds. Digital curation (Higgins, 2011) is a process whereby a specific subject is created by selecting digital content suitable to the subject. The curation utilizes web collaboration between participants of similar subject-oriented communities. In order to define the subject, each of the participants (curators) formulates a relevant set of key-words. A specific curation tool forms an input stream comprising a number of records having various relevance and quality levels. The task of each curator is to filter the input stream by approving one record and rejecting another. As a result, every curator forms his/her own output stream that we consider as his/her personal curriculum. One of the most important features of the above process is the fact that curation takes place in the form of collaboration with other curators of similar subjects. Output streams of some curators may, in turn, form input streams of others.

2.2 Personal Identity On-line

Classical virtual micro-worlds (Papert, 1991), when representing a personal learning environment, are often devoid of another important educational component - its social component. This highly significant component has successfully been fulfilled by existing learning environments. But does a student's connection to a global network deprive the learning environments of their individual, private components? Our hypothesis is that the answer to this question is negative. This hypothesis is mainly based on the fact that today's students' identity is formed within the network in a very different way from the conventional one. This new, networked identity is called Personal Identity Online (PIO) (Floridi, 2011).

The concept of PIO is relatively new (Rodogno, 2011; Floridi, 2011). It personifies a specific characteristic of an individual's behaviour in a network environment, which manifests itself in the form of a unique opportunity to form and exhibit the individual's identity differently than is done in reality. The world network of unsurpassed access to data opens up new opportunities for self-expression and the formation of identity. We consider PIO to be a form of personalization that typifies modern learning environments.

The last 30 years has ushered in years of intensive computerization of society and of incredible achievements in information technology. Perhaps the idea that micro-worlds will replace classroom-based education was just an illusion. However, we believe that this is not the case. Here, we show that the constructionist approach successfully describes the coming post-industrial educational system, but that it needs some clarifications.

The first clarification concerns the idea of individualizing the educational system and its corresponding digital resources. We believe that personalization of the learning process is not related to individualizing digital resources. On the contrary, the distribution of educational resources has turned out to be more intensive and that is why distribution has increased personalization. This is especially evident in the phenomenon of "cloud computing" in education (Sultan, 2010; Geth, 2010).

The second clarification concerns the intimacy of the educational process. 30 years ago we already saw that personalization of the learning process is strongly connected with expressing and forming the learner's personal identity. Today we extend this concept by introducing PIO - an identity that a user establishes in on-line communications – the concept that constitutes one of the essential properties of digital life.

Introducing the concept of PIO into our study allows us to hypothesize that recent learning environments can be considered as interacting social personal micro-worlds constructed in virtual space.

We propose developing Seymour Paper's Personalization and Virtualization approach, which one may call a Personal Identity Off-line by adding a Ubiquitous trend to the new Personal Identity On-line that we study in the context of the Ubiquitous Personal Learning Environment (Kojukhov & Levin, 2010; Graf & Kinshuk, 2008). In this context we study both the identity a user constructs by himself and the identity the user constructs through others (Amelung, 2007). The identity that a user constructs through another person comes from the information that is currently available. The forms of information, including on-line availability, the quality of work contributed, and replies in discussion forums significantly contribute to shaping and transforming his identity.

Another important point related to identity is that on-line identity is always present and accessible to others (Amelung, 2007). For any objects uploaded to the environment, or, for example, communications in collaborative tools, the information remains readily available and continues to influence the actions of others, even if the user is not currently on-line in the system.

3. PLE Research Goal

The main goal of our research is to study regularities and patterns in the process of designing social micro-worlds by students. We have observed a group of students from a teachers' training course.

The first hypothesis of our study is that a social micro-world can be considered as comprising a set of blocks interconnected according to some rules and corresponding to various channels (blogs, forums, cloud storage, events, content providers, etc.). These channels include Facebook, Wikipedia, YouTube, Dropbox, Evernote, etc. By connecting the above blocks, a student creates his/her unique personal social micro-world. The student achieves this by means of various web-software tools (for example, the so-called mash-ups), which are used to arrange the combined functioning of the above blocks.

Using multiple Social Media channels in a classroom environment can be both complicated and time consuming. Because the data are transient the teacher must check the environment often and respond to many students' requests. The data are always moving and the window of revision is relatively small. There is a service that allows one to achieve to some extent the automation of social media tools. It is quite a popular IFTTT (If-This-Then-That) mash-up that specifies a set of rules defining interactions between different social media channels. Some teachers found the service to be very useful. For example, their students create Twitter accounts and follow a teacher's id. This helps connect educational resources to twitter followers and establishes a foundation for creating a personal learning network (Curos, 2010) and allows a teacher to immediately give students feedback and "a pat on the back".

In our study, we used IFTTT whereby students form their set of rules when creating their social personal micro-world. Besides the obvious advantages of IFTTT described above, another reason for choosing the IFTTT mash-up is based on the authors' belief that IFTTT is a highly appropriate tool for reflecting on the recent network's uncertainty and unpredictability.

The second hypothesis of the study is the idea that the structure and content of the IFTTT rules contain information about epistemic and meta-cognitive characteristics of the students' behaviour in the network. Indeed, learning activities such as planning how to solve a given task, monitoring comprehension, evaluating progress toward completing a task, and knowledge of these activities are meta-cognitive in nature. Thus, an important step in enhancing the education environmental outcomes is to obtain clarity regarding how meta-cognition influences how and how often teachers bring themselves into the learning process and especially into the on-line learning environments (social communities, forums, etc.). Teachers' PIO is correlated with the content of their participation in online environments and in creating collective knowledge. It is therefore critical to design online interaction contexts to support PIO in a manner that promotes meta-cognition and development of soft-skills for constructing a community of collective knowledge rather than simply sharing experiences and individual insights (Johnson et al, 2010).

Studying both of the above hypotheses is reflected in a so-called Traffic Pattern, as well as in interviews, which clarify the students' epistemic beliefs about new learning within social personal micro-worlds.

4. Study of Teachers' Training Based on IFTTT

4.1 Research Methodology

A new course for teaching teachers within the social micro-worlds is being developed in the School of Education at Tel-Aviv University. This course includes a number of essential theoretical topics that allow teachers to better understand the new social and technological trends in education, as described above. There are a number of practical exercises within the agenda of the course, allowing teachers to explore those tools that will be used in communicating with the teachers' community as well as for creating and customizing their personal micro-worlds. For instance, the teachers' personal learning network includes social communities, forums, and digital curation networks. The study includes developing a curriculum for teachers' training by using a specific social micro-worlds environment. During the training, we study meta-cognitive aspects of teachers' interaction with the environment and the inter-connection between meta-cognitive and epistemological aspects of this interaction.

Population studied. A group of 20 teachers took part in the course and participated in the study. The course lasted half a year (1 semester). Teachers were required to have only a basic understanding of using computer technology in their classes, such as the ability to use Power Point software for preparing teaching material and having only basic Internet skills. There were no limitations regarding the professional background of the participants. The participating teachers were requested to plan and develop an IFTTT environment in their classes, adapting it when necessary.

Questionnaire. The research included an initial epistemological questionnaire where the teachers were asked about their epistemic beliefs regarding using educational computer technology in their classes. The questionnaire uses the life experiences of the teachers in order to better understand how teachers use technology in their classes, as well as why they decide to use technology in specific ways (values, beliefs, targeting specific needs, etc.) as described in (Wang & Chai, 2010).

IFTTT-based environment. IFTTT mesh-up software supports teachers in creating their personal social micro-world, which enables them to manage a number of channels for curation of subject content, to retrieve educational data, gather and process it as well as keep it for future use. In addition, IFTTT was used for managing student-teacher and student-student interactions.

Teachers create "recipes" expressing different if-this-than-that actions over two or more channels (curation tools, social networks, web apps, subject-oriented software and even hardware). The recipes define the set of rules that are supposed to be used to perform a specific action within one of the channels when something happens on the other one. IFTTT follows the "if this happens, then that occurs" process.

For instance:

- For managing a Facebook group, all posts with a specific "tag" are captured in the Google Doc
- Tweeting with a certain hashtag on Twitter will send that Tweet to a Google Doc
- When you curate a specific educational topic in "Scoop-it" all new topics that you curate are sent as posts in a Facebook group as RSS feed
- Send certain Wikipedia-related RSS feed updates to Evernote, etc.

Teachers were requested to create 4-8 recipes as a combination of the channels summarized in the table below.

Table 1: IFTTT Channels

IFTTT Channels			
Events/Triggers Notifications	Blogs/Forums	Storage	Content providers
E-mail Facebook states/wall/Group posts Feeds/News feed/RSS Google News	Facebook Groups Blog Google+	Google Drive Evernote Dropbox Feedly	Wikipedia Vimeo YouTube Camera Any News forums

Facebook Group. Teachers (students of the course) were requested to join the dedicated Facebook group and reflect on their findings and progress in developing the environment. The FB group was also used for sharing teachers' questions and discussing the best applicable recipes. The FB posts and IFTTT recipes were connected with the tool collecting data about teachers' on-line interactions with the content as well as during their on-line discussions in the group and in external forums. In this context, we studied both parts of the teacher's Personal Identity Online: the identity that a teacher constructs by himself and the identity that the teacher constructs from others (Amelung, 2007). In the Environment the identity that a teacher constructs from others comes from the available information. The forms of information, including on-line availability, the quality of the work contributed, and replies in discussion forums, significantly contribute to shaping the identity. The collected data are analysed in conjunction with the data collected from the questionnaires.

Analysed data. The tools were developed to analyse teachers' traffic patterns and to estimate the following data.

The relationship between teachers' PIO and use of the environment regarding the following criteria:

- The number of attempts to access Wikipedia to retrieve education content

- Curation of the topic

- Use of other data retrieval engines like Google, Yahoo, and other forums

- The number of attempts to access Wikipedia to bring arguments to discussion

- Students' Success/number of citations in the forum versus the frequency of Wikipedia browsing

The meta-cognitive characteristics are:

- Correlation between finding a truth and curating authorities

- Better start with something and reach an initial agreement

- Truth to be achieved later (soft skills – leadership, compromises, etc.)

The following PIO characteristics are considered in this research:

- How others view this person: authority, citations

- How frequently this person is involved in the discussions

- Whether this person finds applicable key terms that are frequently used by other participants in the discussion

- The role of the person in creating group knowledge

The participants' discussions (Nodes) and those who accessed external content providers (e.g. Wikipedia) were graphically represented using the NodeXL application.

4.2 Analysis and Evaluation of the Results

The evaluation encompasses meta-cognition analysis in order to assess the level of meta-cognition of teachers' interactions with the environment, as proposed in (Topku & Ubiz, 2008).

The discussion forum is one of the tools used for evaluating teachers' meta-cognition. Each message from teachers in the forum discussions is assessed regarding the interaction types of coding techniques developed by McKinnon (2000). A grading rubric developed by Topku & Ubiz (2008) is used to score the teachers' messages, thereby determining the quality of their participation; it covers all components of meta-cognition: meta-cognitive knowledge, meta-cognitive judgments and monitoring, as well as self-regulation and control of cognition.

The correlations between the various aspects of teachers' beliefs and their on-line interactions are studied by using the method described in (Wang & Chai, 2010).

The preliminary results imply that instructors should encourage teachers to promote their Personal Identity On-line by sending messages explaining or clarifying concepts by using examples from their education practices. Using keywords or tags in the context of IFTTT is highly appropriate for this purpose. These messages usually contained high levels of interactions, motivating teachers to control and evaluate in their minds their knowledge structure as it is related to concepts under discussion. This fosters high-level meta-cognition and stimulates students' awareness of knowledge of the task and self. It also relates the course content to prior knowledge and experience, as well as makes inferences.

In measuring the correlation between the presence of Personal Identity On-line in the discussions and the high level of meta-cognition, the following findings were reported:

On-line discussions with participants whose Personal Identity relies on trustful personal experience, based on educational practice, are usually associated with more follow-up participation in discussions, implying a higher rate of meta-cognition in the overall discussion.

Another finding, also suggested in (Ke et al, 2011), is that in order to promote meaningful on-line discussions, it is critical to promote the creation of social community-based identity. This idea links identity presence with collaborative knowledge, whereby on-line students not only express their personal identities—they also construct a joint social identity in order to achieve collaborative knowledge building.

5. Conclusion

The recent progress of modern society is linked to the rapid growth of various means of communication and, as a result, with unprecedented socialization. Under these circumstances, Papert's concept of private micro-worlds is updated by adding a social dimension. Introducing the social dimension into the concept of personal micro-worlds enriches the constructionist approach, which, in turn, engenders a new concept in the personal learning environment. Thus, the personal micro-world is transformed into the so-called social personal micro-world of a networked person. The research results indicate that the social micro-world can be considered as comprising a set of blocks interconnected according to some rules and that it corresponds to various channels (blogs, forums, cloud storage, events, content providers, etc.).

We proposed using a popular mash-up IFTTT (If-This-Then-That) that specifies a set of rules. The students form the set of rules by creating their social personal micro-world. We showed that the structure and the content of the IFTTT rules contain information about the networked students' behaviour, both in general, and the students' Personal Identity On-line, in particular.

By analysing the Traffic Pattern and conducting interviews, we clarified the students' epistemic beliefs about new learning within social personal micro-worlds and the meta-cognitive aspects of this learning.
To the best of our knowledge, social learning environments were never studied before from the constructionist point of view. Our research fills this vacuum. The research results shed light on social learning environments, both as students' micro-worlds and as teachers' personal knowledge management tools.

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Radio 2.0: How Facebook is Enhancing Audience Participation for Irish Radio Audiences

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Abstract: As a traditional mass medium radio is proving its flexibility and resilience in an ever more digitalised mediascape by increasing its presence on one of the fastest growing digital platforms, Facebook. With the radio industry in Ireland as a case study, this project examines the use of Facebook by radio producers and their audiences as a medium for deeper interaction and explores the functions this contact serves for the audience member, for the radio producer, and for society as a whole. Based on recent findings, this doctoral research argues that radio producers are increasingly engaging with their audiences through Facebook for commercial reasons, in an effort to build audience loyalty and grow their audience share in a highly competitive industry. Radio audiences are following their favourite radio programmes on Facebook in growing numbers seeking an enhanced media experience and opportunities to exercise their agency as active audiences and participate in the on-air and online conversations. Furthermore, the evidence suggests that public spheres and virtual communities are created on radio station Facebook pages and that some users build social capital between one another through extended interaction. The convergence of radio with Facebook is thus allowing an old medium to remain competitive at a time when digital media is threatening the traditional mass media.The methodology involves both qualitative and quantitative research methods including interviews with radio producers and audience members combined with a survey of the latter, textual analysis of radio station Facebook pages and a longitudinal content analysis of Facebook interactivity across the Irish radio industry. The project is nearing completion and therefore this paper will present the main findings that demonstrate the capacity of radio as a medium to engage with and profit from the introduction of new digital technologies, particularly Facebook.

Keywords: social network sites / Facebook / Irish radio / audience agency / audience participation / radio audiences

1. Introduction

Social Network Sites (SNSs) continue to grow exponentially in popularity representing, 'one of the fastest uptakes of a communication technology since the web was developed in the early 1990s' (Stefanone et al. 2010). This makes the study of SNSs very timely and relevant in modern media and communications academia.

One of the most comprehensive attempts to define and outline the phenomenon of social network sites was by boyd and Ellison (2007) who define it as:

> 'web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site'
>
> (boyd & Ellison 2007: 211).

As digital media, including social network sites (SNSs), continue to develop and become increasingly pervasive in people's daily lives it is pertinent to consider what affect this is having on traditional mass media, particularly the still widely analogue medium of radio. Radio has faced down numerous technological threats throughout its history including the arrival of television, FM and stereo broadcast and more recently digital broadcasting and the internet. Despite fears that new media might threaten the viability of radio as it has print media; this paper argues that the opposite is closer to the truth. By embracing SNSs Irish radio stations are maintaining their competitiveness by offering the audience an enhanced media experience that further engages them and thus encourages them to return again in the future.

With the radio industry in Ireland as a case study, this project examines how Facebook is being adopted by radio producers and their audiences as a medium for deeper interaction and explores the functions this contact serves for the audience member, for the radio producer, and for society as a whole.

Academic research on audience participation has been largely overlooked by media scholars with most investigations focusing on the medium of television which this author believes offers very limited opportunities for participation when compared to radio (see Carpantier 2003). There is a large volume of

research that looks at SNSs and indeed Facebook from many different perspectives but is mainly US based research. The current research is unique due to its specific focus on the Facebook pages of radio stations and how those pages are being used by the radio stations and their audiences in Ireland – an area that has been overlooked by academics to date.

Furthermore, much research on audience participation involving SNSs has been in relation to political and civil involvement, issues surrounding social capital, and the role of SNSs in the wider community (see boyd 2008 and Ellison et al. 2007). The area of social network sites (SNS) such as Facebook is indeed a new and exciting field of study for academics however, the benefits of a better understanding for audience research and mass media organisations makes this study highly worthy.

Since the economic downturn which began in 2008 advertising revenue in mass media has decreased significantly in many countries in the European Union including Ireland and has caused the closure of many media companies. Despite Irish radio listeners continuing to listen to radio in strong numbers, 84% of Irish adults listen to the radio on a daily basis (Ipsos/MRBI 2014); advertising revenue in the Irish commercial radio industry has dropped by some 40% according to industry figures (Ashmore 2011). This has led to massive spending cuts, the consolidation of resources and a demand for new ideas to protect businesses interests in an industry.

Enter SNSs, specifically Facebook and Twitter which have been embraced with open arms by the Irish population much like the rest of the western world. Figures show that 57% of Irish adults above 15 years (2.4 million people) having a Facebook account and 27% having a Twitter account (Ipsos MRBI 2013). The current research found that between February 2011 to October 2013 Irish radio stations have seen significant increases in the numbers of audience members engaging on their SNS sites, Twitter followers have increased by 159% while the stations' Facebook pages have 35% more 'Likes' in that same period, and these numbers are still growing. Irish radio stations can now boast over 1.3 million aggregate Facebook page 'Likes' as of October 2013 with Twitter not far behind at just over 700,000 aggregate followers. The other mass media in Ireland, namely print and television, have smaller followings on Facebook and much less participation from the audience. Because the vast majority of radio is broadcast live it has the advantage of being spontaneous and impulsive and thus is a medium more conducive to real time interaction and participation from the audience (Winocur 2003).

Facebook was chosen over Twitter for this research project not only because it is the most popular SNS in Ireland but also because it offers more as a return channel for the audience to contribute and interact with radio stations. This was later confirmed through the audience survey which found that Facebook was also the most popular social medium preferred by audiences to interact with radio stations with 88% of respondents preferring it over Twitter (11%) and LinkedIn (1%). Ferguson and Greer found that Twitter is used mainly to disseminate news to the audience or for promotional purposes by radio stations (Ferguson & Greer 2011). In short two-way communication is not as prevalent on Twitter as it is on Facebook.

The top three radio stations with the most number of Facebook page *Likes* are all music stations targeting the 15-34 year old market supporting the argument that radio stations broadcasting to younger audiences are much more successful at engaging their listeners via SNSs than stations with older audiences. Recent figures also show that younger people are the largest cohort using Facebook and other SNSs in Ireland (Ipsos MRBI 2013).

2. Methodology

A multi-method approach was used to collect both quantitative and qualitative data. The use of multiple methods allowed the researcher to gather a rich collection of data and for the triangulation of data which strengthened the veracity of the findings. The bulk of the quantitative analysis was in the form of an extensive content analysis spanning over two years which tracked the growth of audience engagement with radio stations through Facebook and Twitter.

There were two main qualitative methods employed in this research, semi-structured interviews with ten radio industry professionals and a survey conducted with 419 audience members across three radio stations; Radio Kerry, Beat 102103 and RTE 2fm. The survey was also conducted with the audience of the *Tubridy* programme

on RTE 2fm. A total of ten interviews were carried out with radio professionals and the working practices of the radio producers were also recorded by use of direct observation during the broadcast of one programme each. The final method was a textual analysis of the Facebook pages of the stations in question.

In total four radio stations were involved in this research including one national public service station, RTE 2fm, a music and entertainment station for the 20-44 year old cohort. The talk based entertainment programme *Tubridy* presented by the eponymous Ryan Tubridy was also part of the study. Secondly, Beat 102-103 is a regional music station broadcasting to the south east of the country and aimed at the 15-34 year olds. Spin South West is a regional music station based in Limerick city and broadcasting to the 15-34 year olds in the south west of the country. And finally Radio Kerry is a full service local radio station broadcasting to all adults in county Kerry, in the south west of Ireland.

This research employed the inductive strategy of using original sourced empirical data to develop fresh social theory on the use and functions of Facebook in today's society. This concept, known as *grounded theory*, was developed by Glaser and Strauss who described it as the, 'discovery of theory from data systematically obtained from social research' (Glaser & Strauss 1999: 2). According to Glaser and Strauss the theory developed from this approach is so inextricably linked to the raw data that it is very difficult for critics to refute or challenge the newly discovered theory, unlike logically deduced theories which are 'based on ungrounded assumptions' (Glaser & Strauss 1999: 2).

3. Uses for the Audience

Uses and Gratification theory was used to frame the motivations of the audience's use of Facebook as previous research has found it a useful approach (see Raacke & Bonds-Raacke 2008). Uses and Gratification theory challenged the long accepted theory that saw media audiences as being passive, vulnerable subjects at whom influential media messages were being directed (Blumler & Katz 1974, Katz, Blumler & Gurevitch 1974, Schroder 1999). Uses and gratification considers audiences as active media users who exercise their own agency to seek out and select the media texts motivated by their individual needs. It has been argued that the internet provides a perceived higher level of interactivity for the audience (Seiter 1999), a more tangible sense of control, and the "subsequent connotations of increased audience agency" (Graham 1996: 171) and therefore there are greater opportunities for audiences today than ever before.

This study found that audiences visit radio station Facebook pages seeking an enhanced media experience and three main types of content (1) additional information, (2) entertainment and (3) opportunities to learn about and enter competitions. These findings are in line with those of other authors analysing the motivations of Facebook use particularly the motives of seeking out information and entertainment (Park et al. 2009, Sheldon 2008). Audiences also want to exercise their agency by interacting and participating in the on-air and online discussions which Facebook provides the infrastructure for.

Irish radio audiences operate in a cycle which is intended by the radio stations to maintain their loyalty. At the outset 1) the audience are regular listeners of a radio programme 2) and visit the programme's Facebook page for an enhanced experience with more information, a wider variety of entertainment and the opportunities to enter competitions to win prizes. 3) The audience remains on the radio station's Facebook page for the opportunity to participate and contribute to the online narratives. As a result of a rewarding experience on-air and online the audience returns to consume the on-air and online media products again in the future, thus completing the cycle. Figure 1.1 illustrates this process.
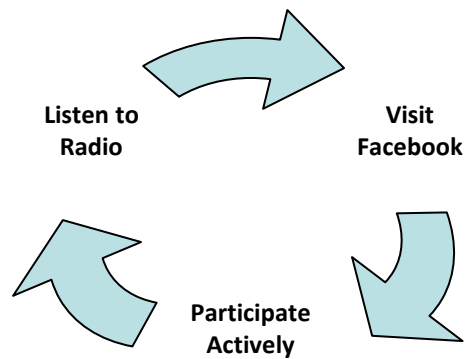
Figure 1: Radio Audience Cycle

The first stage sees radio audiences listening to one or numerous radio stations on a daily basis. This is the origin and foundation of the relationship between audience and radio station and one which the radio stations nurture for commercial reasons (Smythe 1981). The second stage is when audiences visit Facebook seeking information, entertainment and to enter competitions. Producers use Facebook as another tool to supplement a radio station's on-air content, to help promote the radio station through digital platforms in order to drive audiences back to the on-air product or to visit the website, both of which earn the station revenue from the audience's visits.

After spending some time on a Facebook page the audience member the usually decides to participate to some extent thus moving to the third stage of the cycle. Participation with radio programmes via Facebook is an important function for audiences and is an example of the audience becoming more active and exercising their control (Schroder 1999: 39). By using online platforms including Facebook the radio station is able to engage the audience at a deeper level than through on-air content alone. The efficacy of engaging audiences online has been identified by other authors as it offers perceptions of increased interactivity and opportunities to exercise audience agency, see Seiter (1999) and Graham (1996).

The cycle begins again when the audience comes back to the on-air and online content again because of the positive experience they have had on Facebook. Enli & Ihlebaek argue that audiences who are afforded the opportunities to participate in television programmes experience deeper engagement which builds loyalty amongst the audience (Enli & Ihlebaek 2011). This is precisely what the managers and producers at the commercial radio stations stated was their motivation behind using Facebook – to engage audiences in the expectation that they will return as radio listeners which earns the business more revenue. Recent research found that mass media organisations that use SNSs for the purpose of interacting with their audience benefit through increased audiences and constructive feedback that helps the organisation improve its product (Chaputula et al. 2013).

The evidence shows that radio audience are loyal radio listeners and the current study found that users return to Facebook at least once a week. Therefore we can see a patter of consistency with audiences returning to the Facebook page to view the content posted there and to participate in the discussions and conversations taking place provided they enjoyed the experience. As with any media product the challenge for producers is to consistently deliver quality content that is fresh and stimulating and that gives the audience what they have come to expect in order to continue to engage them.

Not all individuals interact on the same depth when they visit a radio station's Facebook page. The schematic below was adapted from Syvertsen's work on audience participation with television and illustrates the three levels of interaction that audiences engage at; (1) *active – low level of participation,* users observe and 'Like' or 'Share' content; (2) *reactive – medium level participation,* users are more involved, composing and posting comments that relate to the content; and (3) *interactive – highest level of participation,* users instigate a conversation or contribute material that influences the online or on-air narratives (Syvertsen 2004)(see Figure 2 for an illustration of the Levels of Audience Interaction). Most users are participating at the *active* level likely due to the minimal mental and physical effort required to click 'Like' or 'Share'. Fewer users take the time and effort to compose comments and very few users post or submit their own material to be posted on the Facebook page. Content analysis across the four Facebook pages over a five day period revealed a total of 21,543 'Likes', 3,464 'Shares', 6,081 Comments and 44 Posts.
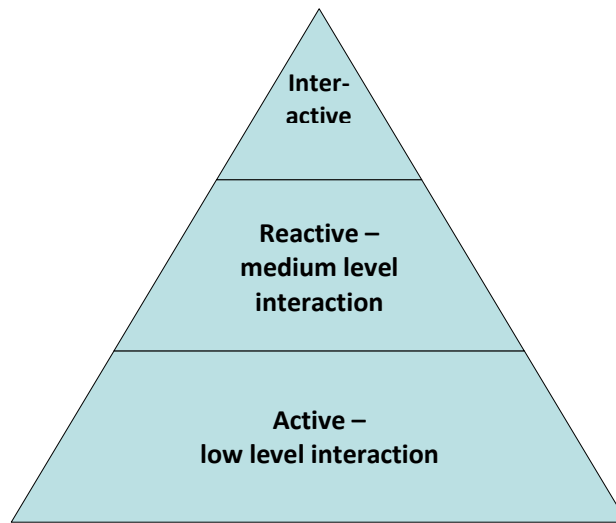
Figure 2: Levels of Audience Interaction

4. Functions for the Radio Stations

Interviews held with station managers found that there are four main functions for Facebook by radio stations: (1) to improve their online presence, which will create more opportunities to (2) promote the station, and (3) help increase audience interaction, which will ultimately (4) increase listenership. This process is presented in Figure 3 below.

Digital media are a mainstay of modern society and becoming more and more prevalent by the day as technology allows us to be connected in more and more ways through mobile communication hardware such as smartphones and tablets and the software that runs them. SNS are the latest software to open new and exciting communication and connection opportunities and radio station management are beginning to understand the potential especially where young audiences are concerned and the need "to be where the audience is" as Nessa McGann of Spin South West puts it (McGann 2013). Increasing the station's online presence is therefore the important first step in this process. Station management and producers believe that Facebook is a very useful tool for promoting the station and driving traffic back to the on-air product or the station's website, both of which generate revenue for the station – at present businesses cannot gain revenue directly from Facebook. Because people are spending increasing amounts of time of Facebook it has become a useful way of attracting the audience's attention and bringing them back to listen on-air.
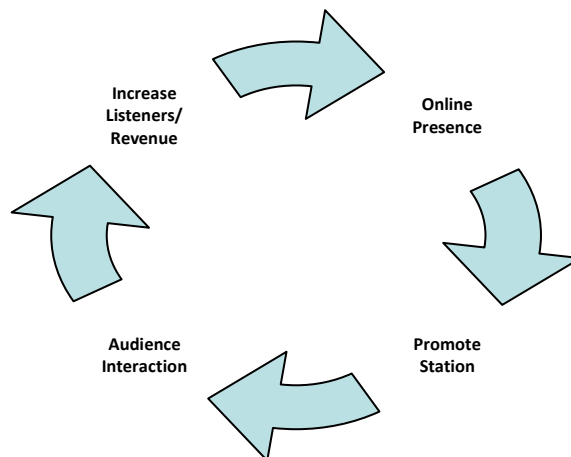
Figure 3: Radio Station Marketing Plan

The third function, that Facebook offers increased interaction between the audience and the station, is what makes the SNS so valuable for producers. Modern media consumers, radio listeners included, want to engage in two-way communication with media producers and are demanding increased agency over the programmes they consume (Schroder 1999). This empowers the audience and makes them media users deciding what they want based on their needs. Facebook fills this need by offering the audience increased interaction opportunities including the prospect of sharing their own multimedia content with the other users. Brecht envisaged a time when radio would fulfil its powerful potential by becoming not only a transmitter of information, but a receiver of information from audiences as well (Brecht 1932 [1964]). It is safe to say Brecht's vision has become a reality with Facebook acting as the return channel.

Listenership figures, or ratings as they are often called, are what drive the radio industry and is the true measurement of success as it dictates the fee a station can charge its clients for advertising and sponsorship (McDowell and Dick 2003). Understandably increasing the number of listeners of their respective radio stations was cited as a key motive for station managers and producers for embracing Facebook because audiences are the "primary product, or commodity, of radio" (Hendy 2000: 31). Stations are motivated to improve the bottom line through what Dallas Smythe describes as the "commoditisation of audiences" (Smythe 1981), where the audience are reduced to a tangible commodity that works to earn money for the media organisation.

A number of the radio stations studied namely Beat 102103 and Spin South West were able to boast a steady increase in listeners over recent years while Radio Kerry have consistently retained their listener numbers. Producers maintain that a consistent and coherent social media strategy has a direct correlation to the strong listenership figures being recorded. Those interviewed were unable to provide concrete evidence to support their assertion and previous research found only a week correlation between stations' quarter hour share and the numbers of Twitter followers stations had (Ferguson & Greer 2011). Further research in this area would be highly worthy. Beat 102103 C.E.O Gabrielle Cummins adamantly contends that because her station's young audience is so connected via social media that she would lose a large proportion of her audience if her were less active on SNSs. Cummins maintains that her station is consistently increasing its listener numbers because they are engaging new audiences through their on-air programming, complemented by their social media activity, including Facebook (Cummins 2013). Interestingly the public broadcast station involved in the research, *Tubridy* on RTE 2fm, did not see audience retention as a primary motivating factor behind their Facebook use. This may be due to the station's reduced reliance on commercial revenue due to their significant public funding support.

Digital media including SNSs are constantly expanding their reach and are taking up increasing amount of people's spare (and working) time (comScore 2011). By preserving an entertained, informed and engaged audience via on-air and online content radio is very well positioned to weather the current economic storm and enjoy significant commercial success as the economy recovers.

5. Functions for Society

This paper argues that a key function of Facebook interaction for society is that it creates online virtual communities (Rheingold 2000). These are spaces where users interact online in environments that share the same characteristics as traditional geographic communities with similar relationships existing online that exist in physical interaction. Numerous authors have presented their essential characteristics of 'community' (see Hillary 1955, Wellman & Leighton 1979, Anderson 1991, McMillan and Chavis 1986, Rheingold 2000, Baym 2010, Delanty 2010, Gruzd, Wellman, & Takhteyev 2011) and commonalities from these have been used to frame this segment of the research. The common characteristics of community identified were; users should have a common shared location; that members should share an emotional connection to other users; that members feel they can influence the community; that members share resources and support; that members have a shared connection with one another; that members feel a sense of belonging to the community; that members have interpersonal relationships with one another; and that members have shared identities.

Members feel part of online communities where they interact with and feel part of a group with other members, even though they do not know the vast majority of the other members, similar to Anderson's (1991) *Imagined Communities* where despite not knowing or being able to actually see all other members in the community the members still feel a sense of unity with them. It was found that stronger feelings of virtual

communities existed for the respondents who were audiences of existing communities in Ireland. Radio Kerry's audience felt the strongest feelings of community; this was most likely because of the existing sense of identity and unity already established in the county through various cultural factors. Beat 102103's respondents likewise felt that they were part of an online community – an extension of the community of south east Ireland which the station broadcasts to and represents. As RTE 2fm is a national station it stands to reason that their audience would have less of community sentiment, which they did. Durkheim posited that the more individuals interact with one another in a group or society the closer and more cohesive they become as a group through what he calls *social integration* (Durkheim 1984: 276). These virtual communities are still in their infancy however, and perhaps over time a stronger sense of community may develop in these groups.

This research also sought to understand to what extent Habermas' public spheres are created on the Facebook pages of Irish radio stations (Habermas 1989). Are the pages open public spaces where rational critical debate can occur amongst Facebook users, culminating in a contribution towards the formation of public opinion? Evidence suggests that public spheres do exist on radio station Facebook pages, based on findings drawn form the audience and textual analysis of the Facebook pages. Although some of the content is believed by the audience to be of a frivolous nature many audience members believe public spheres, perhaps closer to what Keane calls micro-public spheres, are created and do exist on radio station Facebook pages and that these discussions can help shape public opinion on important matters (Keane 1995). Tolson argues that commercial broadcast outlets can't possibly consider themselves public spheres due to their uncertainty of whether to primarily be entertaining or informative entities for their audiences and this appears to hold true on radio station Facebook pages (Tolson 1991: 197).

Although the conditions and spaces are there for micro-public spheres to exist, perhaps these opportunities are not being used to their full potential at present because audiences aren't looking for critical debate when they come to a radio station's Facebook pages they are only seeking information and entertainment.

6. Conclusion

This paper argues that radio audiences are following their favourite radio programmes on Facebook in growing numbers and argues that they are seeking an enhanced media experience and opportunities to exercise their agency as active audiences and participate in the on-air and online discussions. Radio producers are increasingly engaging with their audiences through Facebook for commercial reasons, in an effort to build audience loyalty and grow their audience share in a highly competitive industry. Furthermore, the evidence suggests that public spheres and virtual communities are created on radio station Facebook pages. Facebook is proving to be a powerful asset for the Irish radio industry to remain competitive in the modern digital world by embracing the change and using new media to enhance the audience experience and further engage the user to the on-air and online programming.

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Do Technology-Based Entrepreneurs Perform Better in a Networked Environment?

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Abstract: Entrepreneurial practices are an important economic force that promotes technological change and productivity growth (Schumpeter 1934). Among the several theories that study entrepreneurship, the Resource-Based Theory considers that the founder's access to resources is an important mean for entrepreneurial performance (Simpeh 2011).In turn, literature argues how the entrepreneur's social network may provide the individual with useful resources (Davidsson and Honig 2003) to face the different stages of the entrepreneurial process – opportunity, creation and exchange (Martinez and Aldrich 2011). Moreover, social media is a range of digital applications that enable users to communicate via communities, social networks and virtual spaces; and has created a networking infrastructure that encourages the formation of social ties (Pénard and Poussing 2010). Thus, it seems that social media provides new tools for enhancing the individual's social network, and in turn entrepreneurial performance. In contrast, it is not clear whether entrepreneurs are taking advantage of such social environment to perform better - some studies indicate that entrepreneurs are now having difficulties to capture value in technology-based products and services (Teece 2010). Focusing on the aforementioned controversy, this piece of work aims to refine the current understanding on new venture performance through studying the role the entrepreneur's social network within these new networked settings. Thus, this research follows a two-step research design through an exploratory approach followed by a confirmatory analysis on the entrepreneurial performance in networked environments.Specifically, this research work offers a two-stage discussion to ECSM attendance. First of all, our paper will include a detailed review of the literature on new venture performance, social networks and social media. Secondly, sound insights on how entrepreneurial performance is affected by such networked settings will also be included for further discussion. Finally, this research could be of interest for both academics and practitioners. Firstly, academics could benefit from a better understanding on the influence of the entrepreneur's ego-centric social network on new venture formation process and the implications of social media on entrepreneurial practices. Secondly, this research can be also relevant for entrepreneurs, entrepreneurship promoters or advisors that aim to improve their current practices.

Keywords: Technology-based Entrepreneurship, Social Network, Social Media

1. Introduction

Schumpeter (1934) defined the entrepreneur as an individual whose function is to carry out new combinations of means of production. Thus, entrepreneurship has received special attention in literature as it is considered an important economic force that impulses technological change and productivity growth.

In order to cope with these environments of uncertainty and rapid change (Alvarez and Barney 2005) that entrepreneurs are exposed to, several studies affirm that networking may provide the prospective entrepreneur with useful skills and knowledge, and decrease the ambiguity inherent in the entrepreneurial process (Vasilchenko and Morrish 2011). Moreover, social media has provided access to a wide range of interactive tools that enable faster communication and access to information (Kaplan and Haenlein 2010; Melville, Kraemer and Gurbaxani 2004).

Although it may seem that the networking possibilities of the entrepreneur have been encouraged by the wide range of social media tools available nowadays, it is not clear whether this would impact positively on new technology-based firms. In fact, it has been found that technology-based entrepreneurs working in such a networked environment still have difficulties to capturing value propositions of their new products or services (Chesbrough and Rosenbloom 2002; Teece 2010; Zott and Amit 2008).
The aim of this research is to shed some light on the aforementioned controversy through studying the role of social media on the relationship between the entrepreneur's social network and his new venture performance. Thus, this work in progress is another milestone of the PhD dissertation process that aims to expose the research design employed and to discuss the preliminary results of this research.

In particular, the two-step research design proposed includes (1) an exploratory approach through semi-structured interviews to clarify the scope of the research gap identified; and (2) a confirmatory approach through a quantitative analysis on a cross-sectional basis to provide some empirical evidences. Moreover,

some preliminary results of this work show that entrepreneurs have different opportunities to take advantage of social media that could impact either on their efficiency or on their efficacy.

Research implications stand for both academics and practitioners. On one hand, scholars should benefit from a better understanding on the influence of social networks on entrepreneurial performance through the impact of social media. On the other hand, practitioners such as entrepreneurs, entrepreneurship advisors and promoters would also take advantage of a better understanding how social media impacts entrepreneurial performance through improving their current efforts on the development of the individual's social network.

The organization of the document is as follows. After this introduction, section two revises the state of the art of the effect of social media on technology-based entrepreneurial practices and presents the research gap. Section three describes the research design proposed and the fourth section discusses some of the preliminary findings. The document ends with some conclusions on this piece of work, the future steps and the implications of this research in progress.

2. Literature Review

Entrepreneurship is concerned with the discovery and exploitation of profitable opportunities (Shane and Venkataraman 2000). In particular, several studies adopt Bhave's (1994) three-stage division to study new venture creation processes: opportunity development, technology and organizational creation, and exchange. Although these stages are not separated in nature – they can occur simultaneously – they proved to be good analytic constructs (Martinez and Aldrich 2011).

In turn, within these different stages of the new venture formation, entrepreneurs may require different types of resources: financing, skills (such as managerial, manufacturing, marketing, technical, high tech, etc.); information and access to outside consultants (such as accountants, bankers, government, university, venture capitalists), and emotional support (Chrisman et al. 1999).

While entrepreneurs hold some of these resources themselves, they often complement their resources by accessing their contacts through their social network (Greve and Salaff 2003). Thus, the ego-centric perspective of the social network refers to the individual's relationships (such as friends, relatives, workmates, acquaintances, etc.) that may provide him access to useful resources during the different stages of the entrepreneurial process (Davidsson and Honig 2003). In this sense, many studies have focused on determining the nature of social ties of the individuals and the resource access they provide (Newbert and Tornikoski 2010).

Under a static perspective, the nature of social ties is defined through the strength poles: strong and weak ties. On one hand, strong ties are those relationships with high emotional commitment and high frequency of contact – family, friends, workmates (Granovetter 1973, 1983); useful in situations with high levels of uncertainty and insecurity, such as for providing emotional support (Carr and Sequeira 2007; Liñán and Santos 2007) or enhancing the acquisition of resources (Jack, Dodd and Anderson 2004; Lowik et al. 2012). On the other hand, weak ties imply low emotional commitment and low frequency of contact – acquaintances rather than friends (Granovetter 1973, 1983); and may provide access to various sources of new and disperse information, generating creative ideas (Burt 2001) and even offer opportunities to meet new people (Adler and Kwon 2002).

In contrast to this static perspective of the ego-centric social network, technology-based entrepreneurs and their ventures are embedded in ongoing social and economic relations, including personal and professional ties, all of which affect the way their career and their firm develop (Boccardelli and Magnusson 2006; Vasilchenko and Morrish 2011). Thus, in order to define some temporal characteristics of ties (Witt, Schroeter and Merz 2008); potential ties are defined as those embryonic relationships that have the opportunity of further development (Sullivan and Marvel 2011; Sullivan 2006) whereas latent ties are those established relationships that are currently inactive (Elfring and Hulsink 2007; Sullivan 2006).

In conclusion, no agreement is yet found on the most appropriate composition of ties for entrepreneurial ventures. However, prior research agree that high quality social network structures are characterized by high number of variety of relations (Elfring and Hulsink 2003; Newbert and Tornikoski 2010) and the access and development of ties is essential to create viable organizations (Aldrich 1999).

2.1 The Role of Social Media on Technology-Based Entrepreneurship

Further on the concept of ties communication is a basic way to maintain ties and different media enables such connection. In this sense, the different ways media is used to communicate between individuals show how members at a network are connected and how media creates and support network structures (Haythornthwaite 2002; Lee and Jones 2008).

Information and Communication Technologies have defined a range of digital applications (known as 'social media') that enable users to communicate, create content and share it with each other via virtual spaces (Cooke and Buckley 2008; Cooke, Clifton and Oleaga 2005). In particular, Kaplan and Haenlein (2010) defined social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content".

In turn, apart from the traditional motivations for using the Internet such as information sharing, email, and communication (Stafford et al. 2004); individuals engage in social media to maintain social relationships, to find users with similar interests, and to locate content and knowledge that has been contributed or endorsed by other users (Chen 2011; Dunne et al. 2010).

However, the role of media in a relationship is strongly dependent on the type of tie it connects, the motivation and the need and desires for maintaining such relationship (Quan-Haase and Young 2010). In this sense, social media can act as a complementary tool for connection, where strong ties have new means for communicating (Kaplan and Haenlein 2010), or can expand the reach and basis for initiating and maintaining ties, providing a means through which previously unconnected individuals can now initiate contact (Wellman et al. 2001).

In the particular field of entrepreneurship, prior work also studied the influence of social media on new venture practices with a focus given to identify how different media could support the exchange of different type of means or resources. For instance, despite the networked infrastructure provided by social media, face-to-face communication is still the most extended option for communicating beliefs, trust and complex information.

Finally, this networked environment (governed by social media) is a handicap for technology-based entrepreneurs. Some authors have claimed that entrepreneurs are now having more difficulties to capture value in dynamic contexts. For instance, technology-based entrepreneurs have now more difficulties to propose new products or services to address customer needs (Amit and Zott 2001; Chesbrough and Rosenbloom 2002).

2.2 Research Gap

As highlighted in the literature, networking is an important mean for obtaining useful resources that the entrepreneur may need to support his new venture creation process (Baker, Onyx and Edwards 2011; Davidsson and Honig 2003). Moreover, social media has enabled new ways of communicating, where the individual's social ties have additional means and opportunities of connection - complementing the traditional media (Wellman et al. 2001); and can overcome time and space limitations to access global resources (Lee and Jones 2008; Pénard and Poussing 2010).

In contrast with the premise that social networks aid entrepreneurial performance, entrepreneurs working in such networked settings where they can use social media to communicate and build new social ties don't necessarily improve their performance. According to this apparent paradox, the study addresses the following research question: "Do technology-based entrepreneurs take advantage of social media to enhance their social network to improve entrepreneurial performance?"

3. Research Design

The objective of this study is to understand the impact of this networked environment on technology-based entrepreneurial processes. Thus, the main focus is to address the impact of social media on the ego-centric social network of the entrepreneur, and in turn, analyse its impact on his entrepreneurial performance.

Due to the broadness of the research question proposed, a refinement of the scope of the research gap needs to be done in order to get an accurate perspective of the influence of social media on the social network and the entrepreneurial process. For this reason, the current research in progress proposes a two-step research design: (1) an exploratory approach to examine the scope of the research gap; and (2) a confirmatory approach to empirically analyse the influence of social media on the networking practices of technology-based entrepreneurs.

3.1 Step One - Exploring the Scope of the Research Gap

The first step of this research design aims to get a better understanding of the research gap identified through studying the effect of social media on technology-based entrepreneurial activities under the specific effect on the social network of the individual.

According to the main objective of this stage, it has been found that the most appropriated method is to capture some insights of technology-based entrepreneurs in order to understand how social media impacts entrepreneurial processes. In particular, a set of semi-structured interviews would be held to technology-based entrepreneurs on their exchange stage in order to evaluate the propositions below on the different stages of their entrepreneurial process:

- The influence of the ego-centric social network on the new venture formation process.
- The impact of social media towards the ego-centric social network.
- The effect of social media towards the new venture formation process.

Based on prior studies, the structure of the interviews is the following. First, in order to identify some control variables of the sample, an overview of the start-up and the entrepreneur is going to be collected through the individual's personal traits and background, as well as the type of business, industry, etc.

Then, an in depth study will be driven to understand how social media influences the development of ties, and how this affects entrepreneurial performance on the different stages of the entrepreneurial process (Bhave 1994): opportunity stage, technological and organizational creation stage, and exchange stage. Finally, some general insights on the role of social media on technology-based entrepreneurial practices is going to be captured through broad and open questions on the overall process.

3.2 Step Two - Confirmatory Approach

The second step of this research design aims to shed some empirical evidence on the impact of social media on entrepreneurial performance through its influence on the social network. In this sense, an empirical cross-sectional study is a kind of research strategy that involves the observation of a representative subset at a specific point of time. In this particular case, the cross sectional study would be driven through the administration of surveys to analyze different new ventures at a same point of time; and compare the relationship between social media and entrepreneurial stages (Menard 2002).

Taking into account the findings on Step 1 of the research design, an analysis on the social network of the entrepreneurs would be considered as a complementary tool to approach this research gap (Bögenhold 2013; Howard 2008). However, it is important to remark that the second step of this research design will need refinement on the data collection strategy (survey) that will be defined through the insights identified on the step one and validated through focus groups.

4. Discussion

Two semi-structured interviews have been conducted to technology-based entrepreneurs during December 2013. The actual state of both entrepreneurial projects was on an emergence stage and possible biases on the profile of the entrepreneur and their technological skills were minimized by choosing individuals of similar personal traits such as age rank (around their 30s), educational background (university degree on a scientific field) and cultural values.

These interviews were transcribed and double checked. Then, a detailed examination of main insights has been conducted and a preliminary outline of the key concepts has been structured in order to monitor them through the existing literature, following the strategy of the grounded theory.

4.1 Preliminary Findings

At this early stage of the research in progress, some relevant insights on the role of social media during the entrepreneurial process were captured through the experience of both individuals. In particular, some insights illustrate how individuals connect with their social contacts in a networked environment: "I could communicate with the team members anytime, anywhere, with tools such as Skype or mobile devices", or how they access relevant information: "Internet offers access to relevant information, before you could use libraries and the information is probably more complete, but you would spend much more time. Nowadays, you are just a click from every source of information".

Some insights were also captured on the way entrepreneurs access disperse actors and develop social ties through social media: "I wanted to access specific profiles that could support and validate my project, as well as provide some reputation", "I used LinkedIn to find specific profiles with programming skills to be part of the application development team".

Finally, the implications of these actions were also captured in order to understand the impact of these activities on their entrepreneurial activities. It was found that in some cases these entrepreneurs could improve their efficiency through reducing communication costs or improving information management: "It provided value, well, doing things faster is important", "Internet is a quick and agile information source", "Internet enables to do things in less time and you can work faster". In some cases, the entrepreneurs could also identify how this networked environment affected their efficacy through having access to disperse actors that would provide additional resources: "I could access individuals from Standford University that really enhanced the value of my product, and without LinkedIn it would have been much more difficult to get in contact with them. So of course, this added value to my product."

In contrast, the technology-based entrepreneurs interviewed so far couldn't identify any negative aspects of social media. In fact, they identified that the fact that transparency is a key element of networked environments can also be beneficial to build knowledge through possible competitors beforehand: "You can share your idea and evaluate whether people would be interested", "If there is someone already doing it, it's better to identify them and dissociate your value proposition".

In summary, it has been found that technology-based entrepreneurs have been using social media to both maintain and develop social ties for entrepreneurial purposes (Elfring and Hulsink 2007). Moreover, the implications on their new venture have clearly aided some aspects of their effectiveness and efficacy on different stages of their startup through the repercussion on their ego-centric social network.

5. Conclusions

The promotion of successful entrepreneurial practices has received special attention in literature as a key driver of technological change and productivity growth. In this sense, the study of the ego-centric social network of the entrepreneur aims to understand how these individuals obtain useful resources through their social ties during their new venture creation process (Davidsson and Honig 2003; Witt 2004).

Prior research posits that, from a traditional perspective, entrepreneurs benefit from their social ties to support their new venture creation process (Baron and Markman 2003; Davidsson and Honig 2003). In contrast, recent research has found that entrepreneurs working in a networked environment – where they have new means for enhancing their social ties through social media – still have difficulties to capture value from new products and services (Teece 2010; Zott and Amit 2008).

To untangle this apparent paradox, this study proposes to shed some new light on the role of social media to improve technology-based entrepreneurs' performance. In this vein, a research design based on a two-step research process has been proposed through (1) an exploratory approach to delimitate the scope the research gap and (2) a confirmatory approach to empirically validate the effect of social media on technology-based entrepreneurial performance through the perspective of social network.

Moreover, initial insights on the exploratory study show that entrepreneurs can meliorate certain aspects of their entrepreneurial performance through social media. In particular, some social media tools may enhance entrepreneurs' efficiency through reducing communication costs or information access, as well as improve their efficacy by accessing core elements or resources such as advisors or skilled labor.

In sum, this research aims to shed some light on how technology-based entrepreneurs make use of their ego-centric social network to improve entrepreneurial performance in networked settings (mainly driven by social media). Under a two-stage research design, this work aims to provide additional means to understand the specific aspects of entrepreneurial performance that may be sensible to networked environments.

5.1 Limitations and Future Steps

As in any research, this work won't be absent of limitations that should be considered. First, this research aims to complement an exploratory study with a confirmatory approach, to mitigate some issues related to the research design. Moreover, this research area is quite recent, so prior knowledge and findings is scarce to build comparable results. Finally, as in any research, aspects related to the sample should be taken into account to provide an accurate analysis of the findings.

As stated prior on the research design, in order to proceed with this work in progress the exploratory study needs to be completed and analyzed in order to have a clear research framework of the aforementioned controversy. Then, having a clear and refined perspective of the scope of the research gap, a testable research framework should arise in order to conduct an empirical study to shed light on the effect of social media on entrepreneurial performance.

5.2 Implications

Finally, the implications of this research can be for both scholars and practitioners. From a scientific point of view, this research aims to shed some light on the relationship between the individual's social network and entrepreneurial performance under the influence of social media. In this sense, this research would be of interest for those academics who are interested in studying (1) entrepreneurship from a managerial side and the impact of the social network of the entrepreneur from an ego-centric perspective; and (2) the effect of social media in the field of entrepreneurship.

From a practitioner's point of view, this research could be interesting for different entities or individuals. On one hand, entrepreneurship advisors (such as governmental entities, training centers, entrepreneurship foundations, etc.) could not only gain more understanding of how individual's social network may influence the new venture formation process; but also improve their current programs on the development of networking strategies. On the other hand, entrepreneurs could also take advantage of this research by getting additional insights on how to take the most of social media for their practices and needs.

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Social Networks: Communication Channel or Compliance-Risk Minefield

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Abstract: Due to the near ubiquitous prevalence of Social Networks and the vast user-base, organisations are using them as another communication channel to sell products or services; promote and build their brand; crowd-source for ideas and opinions; or just to connect with customers. However, this paper directs the debate towards the negative consequences of an organisation operating in the Social Networking-space. By using Social Networks, an organisation exposes itself to a myriad of undefined or unmanaged risks, which may go beyond the initial rationale for using a Social Network. These risks may include areas such as security, privacy, or operations. To this end, this paper presents a several high-profile real-world Social Network examples that illustrate the inherent risks that may be encountered (both latent and patent). Ultimately, the paper underscores the importance of implementing proper Risk Management processes across all Social Networking activities. And, as a result, an organisation will be better prepared to handle any incidents in line with the organisation's strategic objectives and operational goals.

Keywords: Social Networks; Risk Management; Compliance Management; Governance, Risk and Compliance (GRC); Viral Marketing; Internet Meme

1. Introduction

The ARPANet was designed to help facilitate cooperation and research on US Defence projects by connecting different academic institutions within America; when it became operational in 1969 it can be viewed as the first physical social network for researchers (Abbate, 1994). ARPANet eventually evolved into the Internet with the introduction of the first web page in 1991 (The European Organization for Nuclear Research (CERN), 1991; Stewart, 2000-2014), shortly thereafter the first on-line social network appeared on the Internet in 1997 (Boyd and Ellison, 2007). While the number of on-line social networks grew steady, it was only when "Facebook" launched in 2004 (Facebook, 2004) that keystone topics such as, user-relationships and privacy protections, were widely-discussed. That propelled on-line social networks into mainstream society. Since then, the number of social networks has exploded to cater for nearly every industry and every demographic; consequently, Social Media portals dominated 7 of the top 100 most visited websites in 2012 (Alexa.com, 2013).

With so much user-traffic directed towards Social Media portals, this naturally attracted the attention of corporations and advertisers, and, as a result, influenced the marketing and communication strategies of these organisations. The main goal of these strategies is to attract customers to the products, services, and/or brand of a specific organisation; with the general rule being, "the more targeted the communication, the more successful the message will be", especially as most organisations have a very specific target demographic they would like to capture. In this regard, social networks are viewed as the ideal marketing and communication channel, as social networks either have detailed user demographic information, or cater for a specific demographic only. In addition, as users view online social networks as a proxy for individual identification (Brown et al., 2007), they are in effect "self-organising" themselves into specific groups with unique demographics (Kolbitsch and Maurer, 2006) and providing a lot more information about themselves voluntarily. Such information would not have been easily access to an organisation previously. Using this information, an organisation is able to craft marketing messages for a specific demographic or group. The self-organising effect also means that an organisation does not need to "build" a group that would be receptive to their message, but rather just needs to determine which social group is the most appropriate for it to target and use.

Moreover, the cost of using Social Media is significantly less expensive than traditional communication channels (Kirtis and Karahan, 2011, Zarrella, 2010). This removes a significant entry-barrier for many organisations, especially smaller organisations. With the amount of personal information available on Social Media platforms, this has resulted in a "gold rush" by organisations trying to capitalise on the behaviour, relationship and interconnections information of users. With the influx of so many organisations inexperienced

in corporate communication, many do not fully understand or underestimate the risk that Social Media presents, such as group behaviour or privacy pushback by user. The aim of this paper is to illustrate, through the use of a few real-world examples, the simple risks that organisations expose themselves to by using Social Media, and the devastating effects that these can have for an organisation. Ultimately, underscoring the importance for any organisation to implement a comprehensive Risk Management approach into all processes that utilise or rely on Social Media.

The structure of the paper is as follows: Section 2 supplies a definition for "Social Media" and "Social Network" that is used in this paper. Section 3 discusses how the marketing and communication strategies have been influenced by Social Media. In Section 4, several real-world examples of the risks that Social Media poses to an organisation are presented, while Section 5 details the importance of ensuring that any Social Media undertaking is integrating into an organisation's Risk Management processes. The aim of future research into this tropic is discussed in Section 6. Finally, the paper is concluded in Section 7.

2. Social Media Vs. Social Network

It is common to use the terms "Social Media" and "Social Network" interchangeably, however there is a clear distinction between the two. Kaplan and Haenlein (2010) define Social Media as: *"a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content."* Such application encompasses everything from blogs to virtual game worlds, where a Social Network is defined as an application with a medium degree of media richness and a high degree of self-presentation / self-disclosure (Kaplan and Haenlein, 2010).

Therefore, for the purposes of this paper, the term "Social Media" is defined to cover all applications that allow the creation and exchange of User Generated Content (UGC), and thus, a "Social Network" is determined to be a Social Media-type subset.

As Social Media covers such a wide range of application, and each social network providing a different level of user's personal information, organisations need to consider how this affects the way that they communicate with the customers and users.

3. Marketing and Communication Strategies

Organisations employ various marketing and communication strategies to attract customers to the products and services that they offer. These strategies revolve around targeting specific consumer demographics and utilising the most appropriate communication channel to advertise a given product, service or even the organisation's brand (Bradley, 2005). Traditional communication channels, such as broadcast and print media, vary in cost but are nonetheless expensive to use; therefore, organisations spend a lot of time, effort and money to ensure that communicating and marketing to their customers is effective and efficient. The costs involved in entering the Social Media-space is greatly reduced compared to traditional communication channels (Kirtis and Karahan, 2011, Zarrella, 2010), and are thus allowing many smaller organisations with budgetary constraints to enter the marketing space (Hoffman and Fodor, 2010).

Most organisations enter the Social Media-space to "follow the market", justifying its use as a quest to obtain the "coveted prize" of a viral campaign – one that will propel the organisation into the spotlight (Scott, 2009). However, for most organisations, in general, such an argument is not backed up by a clear strategic objective or operational goal, and introduces unforeseen risks. It must also be seen that while traditional communication channels have typically been unidirectional, i.e. from the organisation to a consumer-group, Social Media supports bidirectional communication, which can be initiated by the user quickly, easily and publicly (Mangold and Faulds, 2009). This represents a challenge for an organisation on handling the hundreds, or even thousands, of communications initiated by users, especially if a user is expecting some reaction.

Therefore, a viral marketing campaign is not sufficient justification for the use of Social Media, compared to the myriad of undefined or unmanaged risks that an organisation exposes themselves to when using Social Media – which may include areas beyond the initial scope or rationale for using Social Media.

4. Real-World Social Media Risk Examples

All organisations expose themselves to a certain degree of risk in the environment that they are operating in; operating within a Social Media environment is no different. However, the risks that organisations expose themselves to when operating within Social Media may not be too obvious or goes beyond the traditional risks associated with the marketing and communication environments that organisations are familiar with.

The appropriate responses to a risks associated or created by an online social network, depends on the organisations operating environment, type of social network, the nature of the incident and its associated risks, as well as the impact it can have. It must also be taken into consideration that any incident on an online social network happens within the public domain and can have high visibility. Thus, how and what the responses is can far reaching effects for the organisation, and potentially, even on the industry.

4.1 Instagram vs. National Geographic

Towards the end of 2012, Instagram updated their "Terms of Service" and "Privacy Policy", both of which would come into effect on the 16th of January 2013. As pointed out by Wortham and Bilton (2012), this update contained several controversial clauses, though the one that causes the biggest uproar was:

> *"To help us deliver interesting paid or sponsored content or promotions, you agree that a business or other entity may pay us to display your username, likeness, photos (along with any associated metadata) and/or actions you take, in connection with paid or sponsored content or promotions, without any compensation to you."*

While the exact meaning of the above clause can be debated at length, the popular sentiment was that this effectively meant that any content uploaded to Instagram's portal, can be used by Instagram for their own use and profit (Wortham and Bilton, 2012; McCullagh, 2012; Bolson, 2013). This controversy caused such a stir that it was determined that Instagram lost half of its active daily users in the period of less than a month – from 16 million to 8 million (Sloane, 2013). While this controversy had an obvious impact on Instagram and its users, it also had a marked impact on organisations that make use of the service. This was succinctly expressed in a post by National Geographic, shown in Figure 1.

Figure 1: National Geographic's response to Instagram's policy change. (Credit: Screenshot by Steven Musil/CNET)

This example illustrates a type of strategic risk that a company must consider. It shows that any organisation that wishes to utilise Social Media needs to take into consideration that they are using a third-party portal, and as such, are affected by decisions made by the third-party that they have little or no control over. In addition, such a strategic risk can greatly influence the direction or future of the company, for example, by requiring a restructuring or mind-set change of the organisation's communication process.

4.2 User vs Company

Customer satisfaction is important for any organisation, and often they have lengthy and detailed processes to deal with and appease disgruntled customers. However, in the past, customers had limited avenues to voice their frustration with an organisation, such as the customer service desk, call centres or postal redress. All these avenues are controlled by the organisation and each incident is dealt with in isolation, away from general view and discussion. However, Social Media has changed this landscape in two ways: firstly, any complaints are in the public domain and are out of the direct control of the organisation, and secondly, it is difficult to deal with incidents in isolation, as due to the nature of Social Media, user interest and opinion begins to coalesce around topics of importance or close to a personal belief.

The first example of this effect is made by Carroll (2009), who had a grievance with United Airlines and followed all the traditional avenues of redress that were available to him. After not being able to resolve the situation, Carroll highlighted his frustrations with a humorous YouTube video (Carroll, 2009). Within a couple of days the video had earned more than a million views, and to date it has been viewed more than 13 million times. The popularity of the video garnered significant media attention and resulted in United Airlines share price dropping by 10%, losing around $ 180 Million in value (Carroll, 2012).

The second example is a game reviewer under the pseudonym of "TotalBiscuit, The Cynical Brit" (Bain, 2013b). Bain presents a very scathing review on YouTube of a game developed by "Wild Games Studio" (WGS). In an effort to suppress the review, WGS filed a copyright infringement report with YouTube and had the video removed from the site. Bain retaliated with another video detailing the flaws with the filed report, as well as the inherent flaws with YouTube's copyright reporting system (Bain, 2013a). The second video received more than a million views in less than a week, resulting in WGS dropping the copyright infringement claim, and ultimately resulting with the game having a 0.5/10 user score on Metacritic.com (Metacritic, 2014).

This example illustrates the power that customers can wield through the use of Social Media, especially, if the topic resonates with a specific demographic. Social Media portals allow people with similar interests, ideas, and beliefs to find each other more easily and self-organise into groups similar to Communities of Practices (Rogers, 2000). This also means that central topics will propagate through such a group quickly and effectively. This is a desired effect, if the central topic is beneficial to the organisation. However, both positive and negative messages can spread quickly within such groups. This needs to be factored in by any organisation with ambitions of using, or already using Social Media. This example represents the possible brand risk that an organisation needs to consider when dealing with customers, both in the real world and on Social Media portals.

4.3 Big Concerts vs. CompuTicket

BIG Concerts is a live entertainment promoter in South Africa that organises concerts featuring big name artists and bands at various venues around South Africa. Big Concerts uses all communication channels to promote their events, including Social Media platforms. While BIG Concerts organises and promotes these events, ticket sales were handled by CompuTicket, which has both physical retail stores throughout the country as well as an on-line ticketing platform. However, for several concerts, the back-end systems of CompuTicket were not able to deal with the huge demand for concert tickets, causing frustration for customers trying to buy tickets in both the retail stores and on their on-line platform (Barodien, 2011). Naturally, the angry customers vented their frustration on various Social Media portals over the lack of planning and provisioning (Barodien, 2011; van der Westhuizen, 2012). In the face of so much user-dissatisfaction, BIG Concerts ended up implementing their own ticketing portal for later concerts (Times LIVE, 2012).

This example shows that organisations can be the victims of their own success, if the marketing campaign is not planned and implemented from a holistic organisation-delivery viewpoint. Hence, it can be viewed as an operational risk. Firstly, online social networks have changed the use-feedback mechanism, where previously it

was private (mail or phone call), now it is in the public-domain and users expect immediate feedback. Secondly, in the case above, both organisations either underestimated the demand that would be created or did not communicate the delivery requirements needed for this marketing campaign. Therefore, it can be seen that there was a disconnect between the marketing campaign's goals, and that what the organisation can deliver. In addition, it must be pointed out that the ticketing portal run by BIG Concerts is not part of their core business function nor is it a core competency. Thus, the ticketing platform will introduce an additional operational risk for the organisation, even though it was deemed the most optimal solution to the situation.

While this section showcased a few risk-world examples, it must be understood that each organisation has a unique risk-profile, and as such, it is impossible to generate an exhaustive list of risks that can be encounter. These examples show that events related to Social Media can have a profound impact on the organisation, such as altering the strategic direction of the organisation. Therefore, the next section discusses, in brief, why Social Media cannot be merely viewed as a marketing and communication channel nor the sole responsibility of the marketing department, but rather should be managed with an organisation-holistic outlook.

5. Governance, Risk and Compliance (GRC) Management

Taking into consideration the examples discussed in Section 4, it is crucial that the marketing and communication strategies of an organisation need to reflect the core strategy of the organisation as a whole. As such, an organisation's marketing and communication department must be cognisant of the operating environment of the organisation. This includes the statutory and regulatory nature of the different environments that the organisation operates in.

For example, any organisation that operates within the European Union must take into consideration the EU Privacy Directive (European Parliament, Council, 2002), or if an organisation is listed on an American stock exchange, the Securities and Exchange Commission (SEC) is mandated to ensure that these organisations comply with the Sarbanes-Oxley Act – which promotes the accuracy of corporates financial information through severe penalties, including criminal penalties (US Congress, 2002).Both of these are examples of statutory requirements, while the Basel III accord – which stipulates the liquidity coverage ratio that a financial organisation *should* maintain (Basel Committee on Banking Supervision, 2013) – is an example of business-best-practice regulatory requirement. All in all, with the myriad of statutory and regulatory requirements that an organisation must comply with, it is essential for an organisation to have a well-defined Governance, Risk and Compliance (GRC) management process in place.

In addition, it is important to note that Social Media can pose a great risk to an organisation, as any incident takes place in the public domain and the impact of an incident will be magnified exponentially due to the reach of Social Media. As such, these risks must be analysed, assessed, monitored and managed as part of the organisation's overall GRC management process (Oehri and Teufel, 2012). While there already exist many different Risk Management processes, methodologies and frameworks (OCTAVE, COBIT, etc.), it is important to factor-in that an organisation must rapidly respond to any changes or incidents that occur in the Social Media-space. As such, most organisations' traditional approach towards Risk Management is not specifically suited to dealing with the rapid nature of Social Media. To this end, an organisation needs to have risk assessment processes or Risk Management tools that are specialised (or at least modified) to meet the requirements of Social Media (Teufel, 2013).

6. Future Research

Overall, the implication of using Social Media raises numerous questions and concerns. In future research, the authors will focus on creating a Risk Assessment and Management framework for Social Media that addresses the following specific points:

▪ What are the goals that an organisation is trying to achieve through the use of Social Media?

▪ What are the general security and risk implications that are inherent to Social Media, or a particular social network?

▪ Across the different industry sectors and the different levels within an organisation, what are the general "risk biases" that arise? I.e. what are the risks that are often either forgotten, ignored, or overlooked?

▪ What are the best practices that an organisation should follow or implement when using, or seeking to use Social Media?

- What factors does a Risk Management methodology need to have to meet the requirements of Social Media?

7. Conclusion

While Social Media allows an organisation to communicate more effectively with its customers, this does not occur without any inherent risk. By illustrating a few real-world examples, this paper showed that there are latent and patent risks involved when utilising Social Media, and that an organisation must take these into consideration. As such, it is fundamentally important that an organisation has clearly defined goals and objectives to guide their risk assessment processes, as well as having defined Risk Management processes to effectively discover risks and efficiently mitigate and manage incidents. Furthermore, this paper shows that Risk Management processes must be adapted to cater for the particular requirements of Social Media.

Finally, the answers to the future research questions will assist an organisation in formulating the strategic direction that they wish to follow with Social Media. By better understanding the risks that Social Media poses, it will aid them with structuring their operational functions, both from an industry and organisational viewpoint.

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Big Data, Little Information – Extending the Data Warehouse for Social Media Analysis

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Abstract: The creation of data has increased dramatically in recent years. Amongst other areas, the field of social media is a driver of this development, which is largely related to the growth of the World Wide Web and the content generated by users in the context of Web 2.0. However, this does not lead to an equally fast-growing amount of information. Indeed, compared with traditional operational data, the information density on social media data is much lower. Nowadays, storing a large amount of data is possible without great costs. However, it is not advisable to store data that cannot be analyzed usefully. The big data hype often leads to a data-collecting mania, although a non-negligible part of social media content has no value for businesses or at least for the majority of business users. Due to social media strategies in conjunction with big data being presented in research and practice, which mostly cause a complete redesign of analytical systems, many companies are unsure how to deal with such data. The hype often leads to overestimating the benefits of new advanced analytical systems. Especially for small and medium enterprises or companies operating in traditional, non-data-driven industries, it is not necessary to entirely replace the existing data warehouse environment. For many companies, it is advisable to use architecture for their analytical system that avoids a revolutionary transformation in order to perform simple analyses based upon social media data. Traditional data warehouse systems can be very efficient in generating an integrated database to gain important insights from social media data in connection with data from operational systems. This article will discuss why a sensible and early limitation of the social media data pool can lead to meaningful conclusions with the help of traditional analytical systems. Moreover, an architecture will be described that allows integrating social media data into a traditional data warehouse. In addition, the architecture enables performing analyses based on large amounts of data, isolated from standard tasks.

Keywords: Social Media Analysis, Data Warehouse Architecture, Big Data, Data Integration

1. Introduction

Big data have become increasingly important in recent years, with more data and data sources available than ever before. These data are used in different areas, such as biology, physics, political science and sociology (boyd & Crawford 2012). For enterprises, the internet is one important driver of big data. Through user-generated content, customers can be analyzed better than ever before. However, such data, produced with the help of social media functions, often provide no revolutionary added value, especially for small and medium enterprises or companies operating in traditional, non-data-driven industries. Regardless of whether social media data (SMD) play an outstanding role for a company, it is necessary to deal with it. To gain important insights, new methods of analysis must be used that can be summarized under the term *social media analytics* (SMA). While very few companies have absolutely no contact with SMD, to allow for a simple analysis, a separate consideration of SMD and big data can be partly useful.

In the context of social media, it is repeatedly spoken about an increasing amount of information that is available. However, it is only a growing amount of data that does not necessarily bring an added value. The information density in traditional operational data is much higher than in SMD. Therefore, the dramatically increasing amount of data does not lead to an equally fast-growing amount of information. To analyze this particular type of data with the help of big data analytics (BDA), new analytical methods also have to be implemented, which are usually complex.

The storage and collection of large amounts of data has become much more affordable in recent years (Chaudhuri, Dayal & Narasayya 2011). A decline in costs for storage media does not mean that data should be stored without reflection; indeed, it is necessary to obtain values from it. Bigger data is not necessarily better than small data (boyd & Crawford 2012). Data that are stored but not used increase the complexity of analysis, as well as reducing the chance of generating meaningful results. Nowadays, it is easy to get data, but it remains a challenge to get information out. It takes much time and knowledge to gain insights from volumes of data with the help of BDA. The variety and volume of such data pose challenges not only in terms of analytics, but also meaningful data storage (Provost & Fawcett 2013).

Companies are often not fully aware of the business value of SMD (Lin & Goh 2011). They are confused by the discussion of the past years. It is often claimed to carry out major changes to existing systems. Although many companies already collect much data, most do not use their full potential (Bryant, Katz & Lazowska 2008). Data integration with operational sources is a topic to handle when SMD should be used in analytical systems and it has not yet been fully solved (Dinter & Lorenz 2012). The data warehouse (DW) plays an important role as a central repository in this context.

In this article, DW architecture is described that allows the analysis of SMD and is mostly based on well-established approaches. Accordingly, we present a theoretical basis in section 2 and introduce related works in section 3. Based on the requirements that we elaborate in section 4, we derive subsequently an architecture (section 5). The article ends with a conclusion and recommendations for future research (section 6).

2. Theoretical Background

2.1 Big Data and Social Media Data

The term *big data* is defined in different ways. It is often described as data that are too big for traditional handling. Compared to a few years ago, the storage capacity and processing speed of computer systems has changed dramatically and thus what we call *big* today may soon be normal. Nonetheless, the term involves more than just storage and performance challenges: big data can be utilized to identify new information, i.e. information for which the data were not initially collected. Even unclean data can be used very well for this kind of analysis, as long as it is large in amount (Russom 2011). Many authors argue that it is no longer necessary to know in advance what data can be used for (e.g. Cukier & Mayer-Schoenberger 2013). It must not be made an assumption, correlations can be identified, which was not thought of before. Through BDA, issues often cannot be analyzed in detail, but a rough direction can be identified. In many cases, it is not necessary to understand why a pattern is emerging in the data, but rather what kind of pattern. Therefore, BDA can also be called black box analytics.

The growth of the World Wide Web has led to a strong increase of data volume. In the context of Web 2.0, primarily user-generated data is compiled through social media functionalities. Such examples include weblogs, microblogs, online forums, wikis, podcasts, social bookmarks and social networking. SMD include tags, user-expressed subjective opinions, insights, evaluation, ratings and user profiles (Zeng et al. 2010).

Through SMD, the behavior of users can be studied. It is much easier to learn the opinions of customers than a few years ago (Bose 2011). A distinction can be made between internally collected SMD and externally collected SMD: the sources for internally collected data are own enterprise websites, whereby all the data is available in detail; by contrast, externally collected data is retrieved from third party sites. Even if the provision is usually associated with little or no cost, it cannot be checked whether all existing data are made available by the service providers (Manovich 2012). There can be no assurance that SMD that are not stored on enterprise servers will also exist in the future. Therefore, care must be taken for own storage. Internally collected data are based on few sources and the amount of data is usually low, whereas externally collected data involve many sources and are of great amount.

Another distinction can be made according to the content of the data: some data are directly related to the company, whilst others are related to its environment and can be used to analyze the market. Again, a distinction can be made according to the amount: market data is usually of a larger amount than data directly related to the company.

The main sources of traditional analytical environments of enterprises are operational systems where data are already stored in a form that allows simple further processing. However, SMD are formatted for human consumption, they are multi-structured, i.e. it is mostly semi-structured or unstructured content. This makes it difficult to prepare it for the use in analysis (Cambria et al. 2014). Another challenge is the quality of SMD, which is generally poorer than with traditional data (Agichtein et al. 2008).

2.2 Analysis and Data Warehouse

In this section, the basic architecture of analytical systems will be presented, with particular emphasis on the data integration.

There are three primary options for the analysis of data:

- *Reporting*: the information is presented rigidly structured, this method is particularly suitable for answering standardized questions;

- *Online Analytical Processing* (OLAP): data for this kind of analysis are organized dimensionally and hierarchically (Chaudhuri & Dayal 1997). It is mainly used for ad hoc queries; and

- *Data Mining*: this includes various statistical methods for analyzing data.

Especially the last option is often mentioned in connection with BDA and SMA. While these are related topics, they should not always be used together. BDA includes large and complex data sets, which requires advanced analytical techniques that often go beyond traditional data mining. It deals with very granular data (Chen, Chiang & Storey 2012), which are not collected in traditional analytical systems (Russom 2011). Moreover, most of the staff lacks expertise to perform high quality BDA (Herodotou et al. 2011). In addition to advanced analytics, which are performed in the context of big data, even simple analysis based on SMD can be executed. The data basis for the analysis is typically a DW. This is a repository separated from the operational systems of an enterprise. It contains consolidated data from different sources that have been processed to support strategic decisions (Chaudhuri & Dayal 1997).

The DW architecture comprises two elements that can be used for meaningful data integration. The first such element is the operational data store (ODS), a component that is commonly used as an intermediate database between the various operational systems and the DW. It can be used for the analysis of operational issues, as well as supporting tactical decisions (Imhoff, Galemmo & Geiger 2003). Inmon has described the similarities and differences between a DW and an ODS, which are shown in Table 1.

Table 1: Characteristics of DW and ODS according to (Inmon 1999, Inmon 2005)

Similarities	Differences
- both databases are *subject-oriented*, the data are organized around major subjects of interest; - both databases are *integrated*, i.e. data from different sources are brought together.	- in a DW, data are stored *historicized*, in an ODS only *current* data are maintained; - the data in a DW are *non-volatile*, in an ODS, changes in source data lead to an *update* process in the ODS; - in a DW the data are *aggregated*, in an ODS *detailed* data are available.

Data marts are the second element of the DW architecture, which contain a subset of the available data. They are based on the data needs of individual groups or decision making tasks (Moody & Kortink 2000) and can be used in various ways: either they contain a subset of the data from the DW or are filled with a subset of data from the ODS. It is also possible to create a data mart directly from the source data.

3. Related Work

There is a strong body of research studying the integration of large amounts of data into enterprise analytical systems. Most solutions that have been developed in recent years are based on Apache Hadoop (Apache Hadoop 2012), which is an open-source implementation of Google's MapReduce algorithm. The idea is that the execution of large-scale analyses is automatically parallelized to conduct them with the help of a computer cluster (Dean & Ghemawat 2004). For example, Chen (2010) and Herodotou et al. (2011) both describe analytical systems based on Hadoop, whereby they try to reduce the complexity of underlying analytical tasks for the end user. However, these solutions require the development of a completely new analytical environment. The authors do not describe how these systems can be integrated into existing DW architectures that have been developed for the analysis of operational data. Thusoo et al. (2010) introduced a DW solution that also uses the Hadoop functionalities, but they provide interfaces that make it possible to continue using traditional analytical end-user tools that have been designed for relational DWs.

For all such approaches, it is necessary to dramatically change the complete DW architecture of an enterprise to continually provide an integrated database for the analysis.

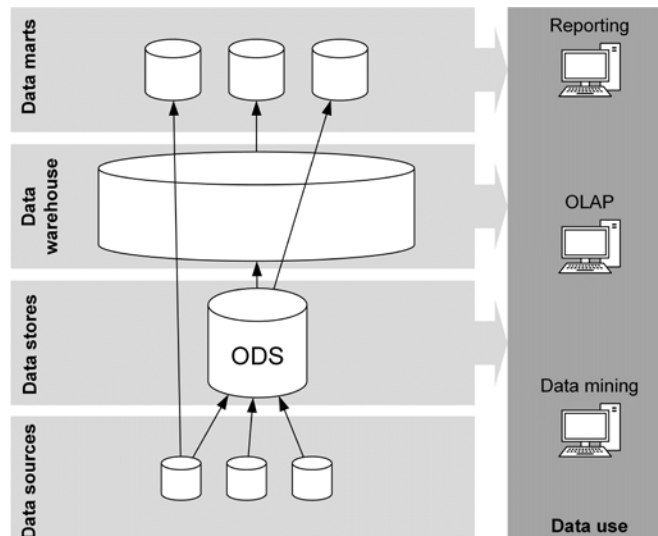Figure 1 shows a traditional DW architecture, as used in many companies.

Figure 1: Traditional data warehouse architecture

4. Elaboration of Requirements

Nowadays, every business has access to big data, given the increasing number of SMD available (Power & Phillips-Wren 2011). While Russom (2011) proposes the general rule that large amounts of data lead to more accurate analysis results, this is not always the case. Even a large amount of data is not necessarily a representative sample (boyd & Crawford 2012). As described in section 2.1, many different data sources exist in the context of social media, but the utilizable amount of data for certain problem areas is not necessarily large. For black box analysis, many companies often do not have enough relevant data available. Data need a purpose, otherwise it will not produce information. As Power (2013) emphasizes: "Big data is not necessarily needed or better data." Not all companies have the capabilities to take advantage of large amounts of data through advanced analytics (Saenz et al. 2013). In particular, small and medium enterprises mainly use simple methods that are provided by OLAP applications (Pighin & Marzona 2012). As Cuzzocrea, Song and Davis (2011) pointed out, it is also possible to perform basic SMA with OLAP systems. Dinter and Lorenz (2012) have even found a great relevance of simple analytical functions in connection with SMD. Although many software vendors have developed new advanced analytical software components, OLAP and reporting remain predominant features. In a survey that analyzed companies with different size, it was found that 76 percent of the participants use reporting functions and 65 percent use OLAP functions for customer analysis. More complex methods are used by far fewer companies (Stodder 2012). In particular, OLAP and reporting tools are not suited to providing large amounts of detailed and unstructured data. For this kind of tool, the data must be prepared, aggregated and filtered.

Only the data that are of interest for a large number of users should be stored into a DW. Nevertheless, the chances that BDA deliver should also be used. Therefore, a separate data pool should be integrated in the DW architecture, which is not made available for all users, but only for those who are specialized in carrying out advanced analytics.

Since not all users will need to perform BDA, their way of working is not fundamentally changed by the integration of SMD. Therefore, they should not be forced to learn the handling of new tools that they do not need for their daily work and perform the analyses that they have already carried out with traditional systems. This would result in unnecessary costly training and investments in software and hardware.

In addition to a re-use of analytical end-user tools, the DW architecture should not be entirely replaced. This would result in high costs, which are often not justified in terms of the added value. The traditional DW architecture can be extended very well to analyze this new kind of data, although the problem of data integration needs to be solved in this respect (Bartoo 2012). SMD must be integrated into the architecture, in order that they gain a meaningful value in conjunction with traditional operational data. It is absolutely necessary to create a common database. There may be no stand-alone solution. SMD cannot only be analyzed separately from traditional data available. Therefore, one of the most significant challenges is to combine a large number of heterogeneous data sources.

If much data are stored in a DW, the maintenance effort increases. Even if it is possible to implement very large DW, it is questionable whether this is a reasonable design decision (Huang, Duy & Fang 2014). An architecture should be used that can manage large volumes of data. Nevertheless, the DW is not the place to store all available SMD; otherwise, it would cause high complexity and the requirements for the analytical system would be unnecessarily high.
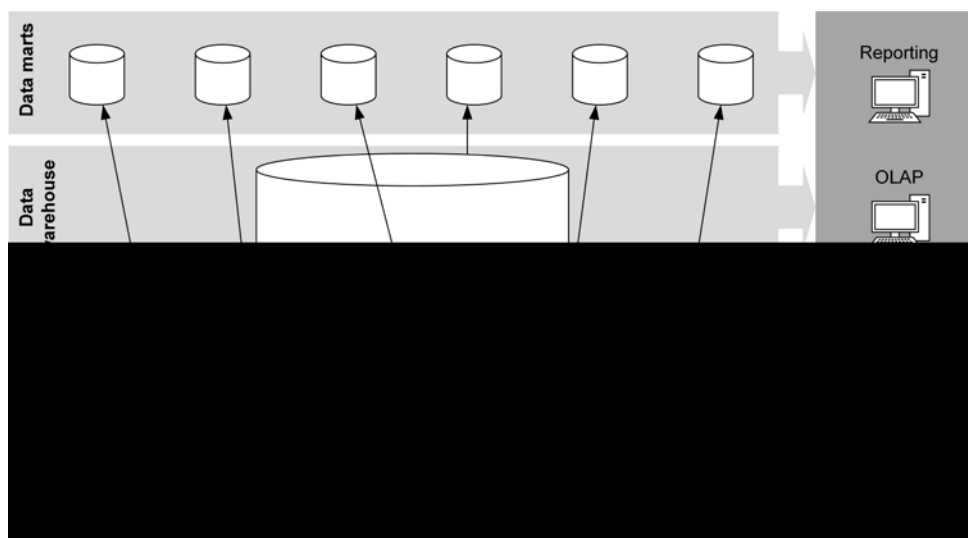
5. Architecture

Taking the previously developed requirements as a basis, an appropriate architecture is presented in this section. One important demand is that existing DW architectures do not need to be entirely replaced. Therefore, the goal should be an extension of the traditional architecture that was presented in section 2.2. The problem thereby involves dividing into the area of advanced analysis based on big data and the area of simple analysis based on a small and structured amount of data.

For advanced analytics, it is necessary to build an additional data pool where detailed data can be integrated and stored from different social media sources. In the traditional DW architecture, the ODS is used to analyze problems at a granular level. Given that there are large differences between operational data and SMD, the latter should not be integrated into the ODS; instead, an additional data pool should be created. This can be called a big data store (BDS).

Not all the data that are stored in the BDS should be loaded into the DW. Only SMD that can be used for analysis with the help of OLAP and reporting tools and are of relevance for a number of users should be further processed. Due to this early reduction of the data, it can be ensured that users are not overwhelmed by new analytical options. The decision for filtering has to be made in a way that it remains possible to gain important yet simple insights. Before the SMD can be loaded, they must be linked with the relevant operational data from the ODS. Therefore, another data pool that acts as a data integration store (DIS) has to be defined. This detailed and integrated database should be the only direct source of the DW. It can also be used for advanced analyses that need to access data from the BDS and simultaneously from the ODS.

The complete architecture is displayed in Figure 2. In contrast to the traditional architecture, there are additional possibilities to create data marts: they can be created either with a subset of data from the BDS or from the DIS. With this architecture, it is possible to continually use established analytical end user tools, with new software components only have to be adopted for advanced analytics.

Figure 2: Extended data warehouse architecture

The BDS can be readily inserted into existing architectures. Although it has similarities with an ODS, there are also important differences, which justifies a split between these two data stores. The following table shows the main similarities and differences between an ODS and a BDS. The list is based on the properties that Inmon (1999) has identified for an ODS and has been extended to meaningful aspects.

Table 2: Characteristics of ODS and BDS

Similarities	Differences
▪ data from different sources are stored in an *integrated way.* However, different sources are distinguished. The ODS integrates operational data sources, the BDS integrates social media data sources; ▪ the data has to be stored on a *detailed* level to provide various analysis options; ▪ the data are mainly used to make *tactical* decisions.	▪ *subject-oriented* vs. *source-oriented*: the subject-orientation in an ODS is a pre-structuring of the data for analysis. By using BDA, it is not possible to identify analytical requirements in advance, so the data should be stored as they appear in the different sources; ▪ *volatile* vs. *nonvolatile*: data from the ODS are historicized in an aggregated way in the DW. Due to the lack of subject-orientation, it is not useful to historicize all SMD in an aggregated way; ▪ *current-valued* vs. *time-variant*: due to the historization of the data in the BDS, in contrast to the ODS, different time slices are stored; ▪ *structured* data vs. *multi-structured* data: the traditional data in the ODS are usually structured relational, while SMD are semi-structured or unstructured.

The DIS takes over the tasks of the ODS as the only source for the DW. Therefore, it should also possess the same properties. This means that the SMD loaded from the BDS to the DIS must be processed for structured storage.

6. Conclusion and Future Research

For many companies, social media and big data are not part of their core business and SMA is not a radical change in respect to analytical systems. However, SMD is too important to ignore. In particular, small and medium enterprises and companies in traditional industries have very low requirements considering the analysis of SMD. However, answers to simple questions can also potentially create great value.

This article discussed the relevance of SMA for virtually any business. However, it was also shown that a separate contemplation of SMA and BDA is useful in many cases. A DW architecture based on traditional structures has been introduced and can be used to gain basic insights, as well as providing the possibility for advanced analytics. Accordingly, two additional data stores have been described: the BDS integrates large amounts of multi-structured data; while the DIS allows the integration of these data to be analyzed along with traditional operational data.

Although the data can be integrated in traditional systems, they differ from those that have been used in DW thus far: firstly, the information density of SMD is much lower than in operational data; and secondly, due to the large amounts of data, it must be taken into account that it cannot be highly purified, as is the case with conventional corporate data (Cukier & Mayer-Schoenberger 2013). The most significant problem is to identify the relevant details and filter out the useless minutiae without losing the possibility of generating insights (Stodder 2012). Pospiech and Felden (2012) call this functional data provisioning. Therefore, a suitable way has to be found for the data selection, data use and the evaluation of data quality (Buhl et al. 2013).

The architecture serves as the basis to facilitate analyses on SMD. In many companies, the users of analytical tools are not specialized data analysts. The risks of poor skills are misinterpretations of data (boyd & Crawford 2012). Therefore, simple methods must be provided, especially for OLAP and reporting tools (Pighin & Marzona 2012). Moreover, new user groups can be interested in the now available data. However, they have even less experience with analytical software. This is one important reason why a separation of the sources for simple and advanced analysis is useful, whereby most users are only provided with selected data.

The architecture can be implemented with the help of various types of software. It does not require the use of specific data storage systems, but allows utilizing either relational or non-relational databases. The approach provides the ability to integrate SMD into a DW without changing the entire analytical architecture. Nevertheless, it can be used for both companies that analyze large amounts of SMD as well as those that have few data of interest available.

In future work, it needs to be investigated how the presented architecture can be implemented. This requires a detailed study of the integration processes, which includes the integration of social media data sources in the BDS, the combination of SMD and traditional operational data in the DIS and the selection and provision of new data structures for the end users.

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Social Media Embeddedness for Small and Medium Tourism Enterprises

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Abstract: Researchers have tended to portray the use of social media in the tourism industry as mostly positive, with documented and potential benefits for both business and potential/confirmed customers (Leung et al. 2013). Despite this, adoption rates for social media remain low, particularly among Small and Medium Tourism Enterprises (SMTEs). SMTE difficulties can be grouped into two themes: the unclear return on investment in social media, and the difficulties of stimulating and maintaining customer engagement online. Addressing the latter theme, and drawing on social sciences, media studies and business studies, this paper reinterprets the interaction between social media, business practices and shifting cultural contexts. We identify the SMTE need for online visibility as the need for social media embeddedness. Drawing from existing critiques of embeddedness, we theorise the conceptual limitations of social media embeddedness that suggest key points of divergence between the social media norms / practices of SMTEs and those of private users. The social media embeddedness limitations are shown to be: the territorialisation of the online dimension, the prioritisation of the economic / erasure of context and limited engagement with issues of agency and power relations within social media. We propose a reconceptualised approach to social media embeddedness that addresses these issues. As a direct result of this reconceptualization and based on Kozinets' (2010) work, a new model of online user developmental progression, roles and types of interaction is being proposed. The disconnect between the existing and the proposed conceptualizations shed light on the mechanisms that lead SMTEs to form unrealistic expectations regarding social media's role, mechanisms and effects. Confronted with established user practices, these prompt, at best, lack of consumer online engagement or, at worst, online backlash. The paper concludes by discussing theoretical implications for the online interaction literature and providing recommendations for the social media strategies of SMTEs.

Keywords: social media, embeddedness, social media embeddedness, SMTEs, online participation

1. Introduction

The concept of economic embeddedness argues that economic processes cannot be separated from human context: they remain rooted in interpersonal networks and in institutions (Granovetter 1985). Businesses need to accumulate and maintain social relationships (both with other businesses and clients) so that they can access the resulting social capital. Social capital (Coleman 1988; Portes 1998, 2000; Putnam 2000; Lin 2003) can be understood as the sum of mutually beneficial relationships accumulated by an agent. The agent can be an individual, a community, a business etc. Embedded businesses draw a variety of benefits from accrued social capital: privileged information, exclusive opportunities, group support, expertise transfer etc. (Anderson and Miller 2003; Anderson et al. 2007). Although the term embeddedness was largely embraced by business studies, it remained predominantly conceptualized as social embeddedness. Zukin and DiMaggio (1990) and Baker and Faulkner (2009) argued that economic embeddedness cannot fully function without cultural embeddedness since cultural capital - seen as the successful adoption and use of the symbols, meanings, values, social practices etc. associated with a group (Bourdieu 1986) – is the foundation that makes the accumulation of social capital possible.

The tourism industry has a great need for online visibility. Online tourism information is being provided to consumers through two main solutions: search engines and social media (Xiang and Gretzel 2010). Search engines provide access to official online content (provided by the business) and to user generated content

(UGC) provided by customers through social media. Researchers and practitioners alike give strong evidence of the positive effect (both actual and potential) of social media in tourism. However, this strong support does not translate into widespread adoption and effective use. Research often reports lack of adoption and insufficient use particularly by Small and Medium Tourism Enterprises (SMTEs) (Stankov et al. 2010; Leung et al. 2013). The reasons for this are complex, but the most often encountered explanations are: poor business understanding of social media mechanisms and low evidence of clear return on investment (Leung et al. 2013). SMTEs often complain about the difficulty of attracting consumers online and persuading them to provide positive UGC for the business (Akehurst 2009).

This paper proposes that tourism's need for visibility online is in fact a need for social media embeddedness: businesses need to be successful at using social media so that they can access it's ever increasing audience and the business opportunities they can generate. Thus reframing the issue, we will further show how this much desired dimension of embeddedness represents a double threat for the business: it embodies the limitations of the traditional concept of embeddedness and aggravates them by adding the limitations of the concept of social media. To counter this double threat, we suggest a new framework for conceptualizing social media embeddedness that can offer some insight into the reasons for the social media difficulties reported by SMTEs.

2. Social Media Embeddedness and its Limitations.

The definition of social media is dependent on a few key terms such as the web and its versions. The web is a system of interlinked hypertext multimedia documents accessed through a web browser via the internet (the global system of interconnected computer networks that use TCP/IP protocols). Grossly simplified, the web is content and the internet is its delivery medium. Both internet and web have undergone multiple structural and technological stages of evolution. Changes in web norms and practices are perceived as the (debated) stages of Web 1.0, 2.0 and 3.0.

Kaplan and Haenlein (2010) offer the following definitions. Web 1.0 is similar to content publishing: an author creates online content and the system allows users to only receive it. Technical innovations made possible Web 2.0, enabling users to interact with content and collaborate in its creation and distribution. In the opening speech of the 'Web 2.0 Conference' (San Francisco, 2004) Tim O'Reilly and John Battelle refer to Web 2.0 as the opportunity to 'harness' UGC to create value for business. The more recent Web 3.0 stage refers to the increasingly integrated services and platforms of late Web 2.0 which can lead to automatic interaction and ability to customise themselves based on individual user behaviour.

Based on this, "Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (Kaplan and Haenlein 2010, p 61). The same paper quotes the Organisation for Economic Cooperation and Development (2007) for the three main characteristics of UGC: it has to be published on a publicly accessible website, has to demonstrate creative effort and needs to have been created outside of professional routines and practices. Kaplan and Haenlein (2010) also provide a social media classification that will be discussed in depth further on.

The concept of the three web stages draws from the economic counterpart of marketing stages. Kotler et al (2010) define Marketing 1.0 as product centric: it is focussed on conveying product specifications through one to many communication with the objective of selling products. Marketing 2.0 is consumer oriented: it communicates to build one-to-one relationships and presents its corporate and product positioning with the objective of satisfying and retaining consumers. Kotler et al (2010) also propose the new concept of Marketing 3.0: value oriented, it uses many-to-many collaboration to illustrate corporate mission, vision and values. However, we remain reserved towards their choice of Marketing 3.0 objective – "to make the world a better place" – and propose that this reorientation towards collaboration and consumer values is motivated by the increasing break down of former channels of marketing, break down caused in great part by the effects of Web 2.0 and social media.

Given this context, how does tourism research approach social media embeddedness? Looking at academic journal papers published on the subject of social media use in the tourism industry between 2007 and 2011, Leung et al. (2013) observed a sharp expansion of the field, particularly from 2010. They classify research into two groups, in terms of content provider: supplier and consumer social media research. Quoting Carson and

Sharma's (2001) five aspects of the tourism business – promotion, product distribution, communication, management and research –, they map studies which generally indicate positive results for social media use in: promotion (advertisements, offers, information dissemination etc.), management (business to business communication, intra-office collaboration etc.) and research (monitoring social media to identify how clients perceive the business and its services); limited opportunities are also identified in product distribution.

From the consumer's perspective, Leung et al. (2013) quote Engel et al.'s (1990) three phases of the travel process (pre-trip, during-trip and post-trip) and map existing research accordingly. Overall, they find research indicating that, when available, consumers trust fellow-consumer generated social media content to make purchasing decisions; in turn, a percentage of consumers resort to social media to make during and post-trip observation on the business and its services, thus perpetuating the process.

Based on Jones' (2008) critique of embeddedness, we attempt to prove that social media embeddedness perpetuates the same conceptual limitations which adversely affect the online behaviour of economic agents.

2.1 The Territorialisation of the Online Dimension.

Jones (2008) observes that economic activity tends to be spatially imagined and the state is often considered one of its chief agents. He quotes Hess (2004) and Jessop (2001) in his critique of embeddedness to show how this concept is territorially theorised on a scalar level – local, regional, national etc. – and how calls for its re-conceptualization on dimensions beyond the institutional and social are attempts at dealing with the limitations thus imposed.

We argue that social media, despite offering a rhetoric of participation, is being theorised and operationalised mainly as economic activity, engendering its territorialisation. Social media is imagined as economic in nature starting from the technological structure that enables it (internet providers, social media platform providers) and culminating in policy (the struggle to minimize the effects that the new norms and practices fostered by social media are having on established economic processes). As a result, the scalarity of economic process (local, regional, national etc.) is translated into online scalarity of time and space; we speak of the age of Internet and the time sequential Web 1.0, 2.0, 3.0 but we also hone in to localize on particular social media platforms as territories encompassing communities (Facebook, Twitter etc.). The economic nature of this is indicated from the very definition of Web 2.0 as a means for businesses of harnessing UGC for their profit and to the very status of social media platform providers as for-profit companies. However, this leads to conflict between economic / policy agents and the users who conceptualize social media based on the rhetoric it markets, a rhetoric of enabling/empowering participation, celebrating collaboration and fostering (re)creation of content. The implications of these two conceptualizations will be explored in section three of this paper.

2.2 The Prioritisation of the Economic and the Erasure of Social-Cultural Context.

Despite its origins which proclaimed economic processes as inseparable from human context (Polanyi 1957; Granovetter 1985), embeddedness theory promotes a dualistic opposition of economy and society (Jones 2008).

The social media conceptualised in economic terms leads to the same dualistic opposition between economy and social media users. This prioritisation of the economic determines businesses to often ignore to the point of erasure the online context of their activities.

We start to reveal this conceptual disjunction by forcing the summarisation of the average social media user's engagement online into one word: (e) participation. A highly versatile term, it finds strong connotations in political studies, as the use of ICTs for facilitating citizen engagement and participation in the policy making process (Tait 2010). However, cultural studies' use of the term closely illustrates the evidenced trends of social media users' activities. 'Participatory culture' is a term pioneered by Henry Jenkins (1992) to describe the contrast between traditional means of spectatorship (one-to-many communication where 'many' represented a largely passive audience) and the new venues opened by new technologies and social media in terms of "shaping, sharing, reframing, and remixing media content" (Jenkins 2013) to serve a multitude of individual and collective socio-cultural interests.

We call attention again to Kaplan and Haenlein (2010): since its publication, the paper has become one of the most quoted references for social media related studies across disciplines (cited so far in 638 documents and 2 patent applications according to Scopus, 02.02.2014). It is also consistently among the top results for any web search for social media definitions. We argue that their representative definition and classification clearly illustrates how business use of social media is commonly positioned in opposition to private use. The definition states that the creation and exchange of UGC is based on the ideological foundations of Web 2.0. As we have seen, the publicly purported ideology of Web 2.0 (enabling/empowering participation, celebrating collaboration and fostering (re)creation of content) differs from its objectives and strategies which are aimed at acquiring and monetizing UGC.

Further business use / private use opposition is found in the criteria that were used by Kaplan and Haenlein (2010) in providing the following classification of types of social media:

		Social presence/Media richness		
		Low	Medium	High
Self-presentation/ Self-disclosure	High	Blogs	Social networking sites e.g. Facebook	Virtual social worlds e.g. Second Life
	Low	Collaborative projects e.g. Wikipedia	Content communities e.g. YouTube	Virtual game worlds e.g. World of Warcraft

Table 1: Kaplan and Haenlein's (2010) classification of social media

The highest rating is attributed to social media in which private users display the highest disclosure rate and provide most information. The classification is based on two media theories and two social processes.

- Social presence theory (Kaplan and Haenlein quote Short, Williams and Christie 1976) equates media influence with high media presence; presence is defined as acoustic, visual and physical contact and its intensity is given by intimacy of presence (interpersonal versus mediated communication) and immediacy of presence (asynchronous versus synchronous communication).

- Media richness theory (Kaplan and Haenlein quote Daft and Lengel 1986) states that the goal of any communication is the "resolution of ambiguity and the reduction of uncertainty" and defines media richness as the amount of information transmitted per a time interval.

- Self-presentation is theorised by Goffman (1959) as, simply put, the idea that people want to project and control images of themselves to suit their purposes as self-image.

- Self-disclosure is the means through which self-presentation is achieved.

We call attention to the fact that upon closer inspection, the criteria for social media classification are: sense based communication, synchronicity of communication, quantity of information exchanged by users, and quantity of personal data and original content provided by users. This representation is the business view of the user as source of data delivered in traditionally measurable ways.

This business use / private use opposition is fully articulated in section three of this paper when we contrast these findings with the criteria that users themselves prioritise: flows (Castells 2000) of user relevant content (re)delivered and co-created in asynchronous communication through what we will term as social media platform specific communicative commonalities.

2.3 Limited Engagement With Issues of Agency and Power Relations Within Social Media

Jones (2008) discusses how embeddedness tends to cast firms/institutions/collectives as agents in economic activity, thus failing to properly capture the cumulative effect of individual agents. He continues to show how embeddedness tends to assign agency and power as the property of an agent and proposes that the re-conceptualization of agency/power as a relational effect is key (quoting Allen 2003). Common research approaches related to social media (e.g. social network analysis) tend to similarly envisage agency and power as the property of influential nodes within a network. Owing to the insights of Manuel Castells, Andrew Jones and Henry Jenkins, we argue that this view pertains to the territorialised social media (where online communities were bounded within specific social media platforms) and is no longer an advisable approach in the evolved social media of Web 3.0.

In developing netnography as a new methodology for online research, Robert Kozinets (2010 pp 28, 33, 35) proposed three models that unravel user behaviour in online communities. He theorises the isolate user who searches for particular information online and, while incrementally acquiring it, becomes enculturated to the norms and practices of an online community and recognizes structure of status and power within it; the user usually then becomes an active member of said community.

Kozinets views online participation as directly related to economic consumption and, based on the intensity of consumption and that of the commitment to a community dedicated to it, the user progresses in time in terms of behaviour and role. Starting from his initial objective in accessing the Web, the user evolves from a newbie who just cruises, to a mingler that is starting to bond with other users/community, a devotee that 'geeks' over the interest of the community and culminates as an insider that is ready to engage in building further value for the community. Consequently, the users roles also evolve from lurker (common name for person that benefits from observing online interaction but does not interact in turn), to networker (described by Kozinets as users who usually bridge communication between different communities), interactor and maker.
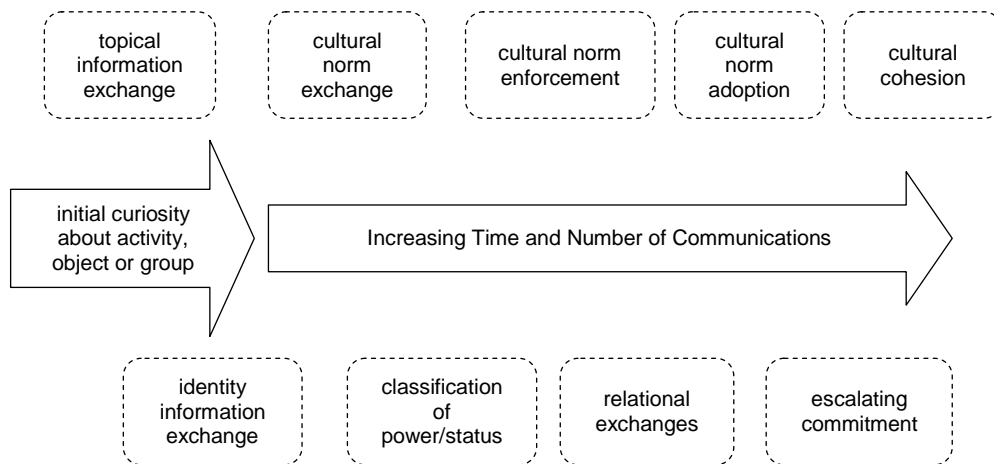
Figure 1: Kozinets' (2010) model of developmental progression of participation in online communities
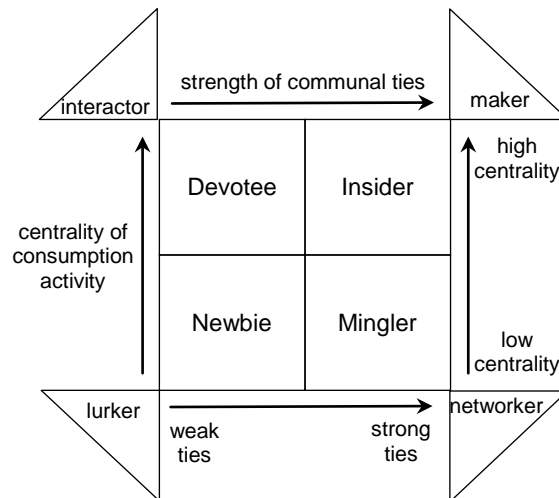
Figure 2: Kozinets' (2010) types of online community participation
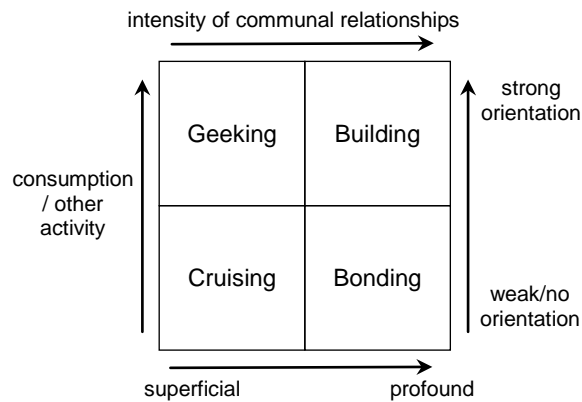
Figure 3: Kozinets' (2010) types of online community interaction

Section three of this paper will outline how these models of user developmental progression change as a result of the reconceptualised social media embeddedness.

3. Reconceptualised Approach to Social Media Embeddedness

Our proposed social media embeddedness stems from the attempt to initiate a working framework that enables SMTEs to anticipate and avoid conflicts with their online audience. Such conflicts are often the partial cause of many online user behaviours towards the SMTEs, ranging from lack of interest and engagement to backlash activities. Based on the limitations identified above we propose the following.

Current social media is no longer territorialised into platforms and communities. It more closely resembles a continuous flow of ideas, content and information, as proposed by Manuel Castells' *Information Age* trilogy and Henry Jenkins' *Spreadable Media*. This continuous flow moves within and in between all social media platforms because users no longer act within the confines of one network, platform or community.

The 'node' must also be redefined: it is no longer focussed on the agent but on the object of the relations - content. The node as agent can be summarised as a user/community empowered by number of connections within a network. Regular users would come to identify these nodes that formed a "group structure of power and status relationships" (Kozinets 2010, p 27). We propose content as the new node inscribed with dual function: credentials of participant and transient locus of agency/power.

Content denoting credentials of user. By not territorializing social media, status structure is being superseded; however, even as a flow, social media is about content and quality of source is key in evaluating content. Social media users judge each other by the content they provide: a user's publicly available posting history (their page/account on any platform) instantly communicates not only their socio-cultural profile (interests, affiliations, attitudes etc.) but their competence within the online space. Their online competence is Web specific (knowledge of norms and adherence to general practices) and social media platform specific (in addition to Web norms/practices, each platform has its own communicative commonalities, specific norms/practices and dominant socio-cultural affiliations). A user's demonstrated socio-cultural profile attracts similarly interested users, but it is their demonstrated online competence that signals them as 'genuine' social media participants and, eventually, trusted (re)emitters of UGC.

'Genuine' in this context does not refer to the identity of the user (real person or not, private or corporate etc.) but to their position within the social media moral economy. Jenkins (2013) applies E. P. Thompson's (1971) moral economy (the social norms and mutual understandings that make it possible for two parties to conduct business) to online activities and signals a fracture within it. The economically defined social media

operates with a moral economy that supports: ownership of content, control of distribution and extension of these over derived UGC. The moral economy of social media defined by rhetoric of participation recognizes content ownership but vastly disagrees over issues of fair use of original content and ownership/commodification of USG. In this context, our user is 'genuine' to a category of users when he/she demonstrates understanding of and general adherence to their moral economy (norms and practices but not necessarily affiliation). 'Genuine' users are included in participatory culture; users who display sustained disregard for a number of norms and practices of a user category will either be ignored or will receive backlash (online negative feedback expressing rebuttal in all forms of UGC).

Content as transient locus of agency/power. The economic/territorialised social media largely adheres to the 'stickiness' concept (Malcom Gladwell 2000 as quoted by Jenkins 2013): content designed to resonate with the audience is being placed in measurable online locations to attract users. We support Jenkins' (2013) view that relevant media content should instead intersect the audience's focus/location and be designed for 'spreadability': easily modified and transferrable between social media platforms. Within a social media conceptualised as a continuous flow, power resides in the flow's potential to enable action. When certain relevant content manages to intersect the personalised media stream of many users, the resulting surge of visible activity is the enactment of that power. Although some platforms/groups/users will be more visible than others in this surge, the power enacted does not pertain to them, but to the extent and intensity of relations activated by the content.

We propose that newcomers to the Web and social media will continue to approximate Kozinets' (2010) model of developmental progression of participation but their enculturation will be to the general norms and practices of the web followed by a certain degree of commitment to social media platforms that are most likely to cater to their interests. Within each chosen platform the enculturation is refined to include its specific communicative commonalities, norms and practices. The resulting social media user must be capable of emitting spreadable UGC in a manner that intersects the media streams of the desired audience (figure 4).
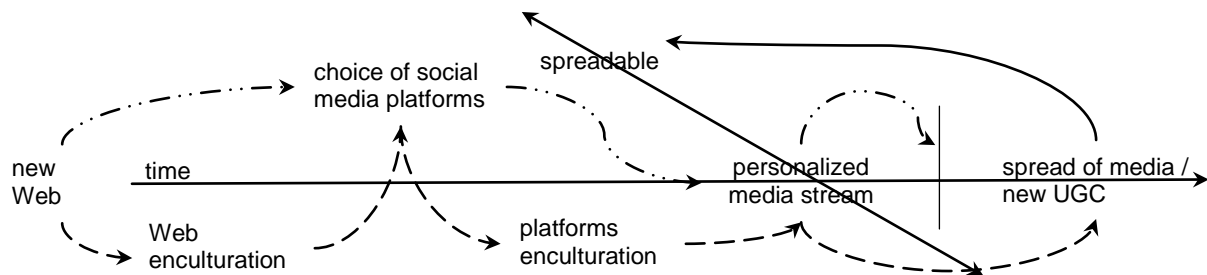
Figure 4: Proposed progression of online participation. Dash path represents ideal progression. Dash-dot path represents minimal progression.

The types of roles and interactions defined by Kozinets (2010) are circled through constantly, across platforms, with one user endlessly switching between them depending on his/her momentary circumstances (figure 5).
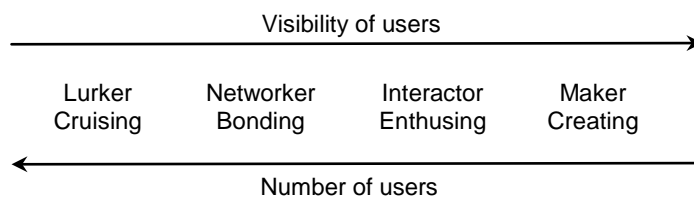
Figure 5: Roles and types of interaction of the online user (used interchangeably and/or in combinations). Highly-involved users are not numerous but they are the most visible online.

Figures 4 and 5 illustrate this alternate view of an online user's progression of participation. In figure 4, the dash path includes web and platform enculturation as a necessary step in achieving the end result: a user capable of emitting/producing spreadable media/UGC that feeds the flow of social media. Notice also that this progression is possible but not guaranteed: the dash-dot path illustrates the minimal necessary progression

that results in a Web / social media user able only to witness the flow but not contribute to it. This user is mostly confined to the lurker / cruising role and type of interaction because of his/her lack of understanding of and adherence to social media mechanisms, norms and practices.

4. Conclusions

The central purpose of this paper is to argue that tourism industry's need for visibility online is a need for social media embeddedness. Unfortunately, social media embeddedness is shown to inherit a decidedly economic conceptualization from both precursor terms (social media and embeddedness). Thus, it remains territorialized into online social media platforms (Facebook, Twitter, TripAdvisor etc.) and online 'communities of interest' (tourist forums/blogs) when its potential audience has already transitioned to social media as an un-territorialised flow of content. It continues to think synchronously and separates users as business /vs/ potential-customer when users credentials are given by their assimilation into social media as proven by the asynchronous view of their online activity. It continues to attempt to lure users to it instead of meeting them half way. Finally, it continues to seek power by becoming a destination ('node') instead of becoming visible by collaborating in the enactment of power through flows of content.

Alternately put, tourism research reveals attempts at using Web 2.0 (the business as part of social media conversation and harvester of UGC) by employing Marketing 1.0 (content designed as business centric not customer centric) to speak to a potential audience that has transitioned to Web 3.0 (co-creation and integration based on a moral economy often incompatible with the moral economy of businesses).

The SMTE has to approach online activity not as a privileged user, exempt from normal requirements, but by first experiencing enculturation into social media platform-specific communicative commonalities, norms and practices. Only through this process can the business gain understanding of the moral economy of its potential customers and avoid breaching it.

Further research can greatly enhance this proposed framework for social media embeddedness and can lead to insights into the mechanisms for success/failure associated with various forms of online interactions enacted by businesses in general and SMTEs in particular.

Acknowledgements

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Seeking and Sharing Research Information on Social Media: a 2013 Survey of Scholarly Communication

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Abstract: Introduction: For academics, the methods of seeking information and sharing research work have been broadened dramatically since the development of internet and Web 2.0. Apart from online journals, academics may gather research information from various online services, such as wikis and Twitter. Social media tools have also provided novel distribution channels for research outputs. Rather than waiting for the long process of publishing in peer-reviewed journals, academics may share ongoing research on research blogs and other social media platforms. **Methods:** An internet survey was conducted with 1829 researchers from 12 Russell Group universities. Comparing to the data sourced from the HESA, our sample of UK academics was broadly representative of the UK academic population as defined by our primary demographic variables of gender, discipline area and age. **Findings:** The vast majority of respondents never used Twitter (84%), blogs (84%) or social networking sites (81%) to publish ongoing research updates or contributed to public wikis (84%). In total 30% of respondents had experience in sharing ongoing research updates on social media to some extent. Only 16% of respondents reported having used Twitter and 20% reported having used social networking sites to gather research information. However, 60% of respondents reported having read research blogs and 77% reported having read public wikis. Compared to the findings of a similar study, the percentage of academics who reported using Twitter in their research work increased from 10% in 2009 to 21% in 2013.

- Respondents in Social Sciences and Humanities were more likely to gather research information as well as post ongoing research updates online than those in Sciences disciplines. However, respondents in Natural Sciences were more likely to read a public wiki as well as contribute to a public wiki in their research work than those in Medical Sciences, Social Sciences and Humanities.
- Older respondents were more likely to be non-adopters of social media services for both seeking and sharing research information.
- Women seemed to be slightly more likely to adopt Twitter to post ongoing research updates and the gender difference was only significant for junior researchers and respondents in Natural Sciences disciplines.
- Men appeared to be more likely to contribute to a public wiki in their research work and this gender difference was only significant for early to mid career researchers and respondents in Medical Sciences, Natural Sciences and Social Sciences.

Keywords: open science, Twitter, blog, Social Networking Sites, wiki

1. Introduction

For academics, the methods of seeking information and sharing research work have been broadened dramatically since the development of internet and Web 2.0. The physical spatial restriction of looking for information in books and print journals in the library has now been liberated. Nicholas et al. (2009) studied Oxford Journals database and found that many UK researchers searched research information online out of office hours and probably at home. Apart from online journals, academics may gather research information from various online services, such as blogs, micro-blogs and wikis. Some early academic adopters of Twitter suggested that Twitter was useful for helping them keep up to date on new literature in their fields (Bonetta 2009). Wikis and blogs were found to be frequently used by academics 'keeping up to date' with the latest progress in the research field and 'searching' for knowledge (Gu and Widén-Wulff 2011).

Social media tools have also provided novel distribution channels for research outputs. Rather than waiting for the long process of publishing in peer-reviewed journals, academics may share ongoing research on research blogs, such as the Open Notebook Science project. Open Notebook Science in Chemistry and Chemical Biology was a project whose participants used a web blog to record day-to-day laboratory work within which data could be linked and open to the public (RIN 2010). This involves real-time scholarly communication at all stages of the scientists' work. Other studies also found that social media services such as blogs, Twitter and social networking sites, were effective in disseminating scholarly materials such as publications, information of research projects and conference promotion (Kjellberg 2010;Letierce et al. 2010;Nicholas and Rowlands 2011). However, the proportion of the UK academics adopting social media tools to seek and share research information are not clear except a survey study conducted in 2009 by Procter et al. (2010b). This current study is trying to construct an overall picture of UK academics seeking and sharing research information on social

media and examine adoption disparities for different groups in terms of gender, discipline area and age. The data collection of this current study was completed in the summer 2013.

2. Background

Social media can be referred to a group of online applications 'that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content' (Kaplan and Haenlein 2010:60). Web 2.0 is seen to offer a technical platform for its users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community, in contrast to websites where users are limited to the passive viewing of the content that was created for them (Thanuskodi 2011). Examples of Web 2.0 applications include social networking sites, blogs, micro-blogs, wikis, photo and video sharing sites. These new applications have become more and more popular among academic users and were found to be effective information resources as well as dissemination channels (Gu and Widén-Wulff 2011) in addition to traditional peer-review journals and academic books.

Previous studies of Web 2.0 conducted by Procter *et al. (2010a; 2010b)* and Stewart et al. (2012) used an internet survey with a large sample of UK scholars and interviews with survey respondents and publishers. Procter et al. investigated the use of blogs, wikis and other social media sites in 2009. The survey results indicated that only 4% of respondents wrote a research blog and 1% contributed to a public wiki as frequent users, while 39% of UK academics were non-users of social media. Their findings also suggest that current forms of scholarly communication among UK scholars were strongly influenced by disciplinary and institutional norms. While users of web 2.0 came from all age groups and levels of seniority, the age group 35-44 had the highest percentage of frequent users. Twitter has only started to gain popularity with scholars in the last couple of years and the uses of Twitter to disseminate research information were not asked in the 2009 survey. Their survey asked whether respondents used Twitter in the course of their research in general. Approximately 4% of respondents reported 'frequently' (at least once a week) and 6% reported 'occasionally' which made it 10% in total for Twitter use in academic work. Over the past three years, Twitter has been adopted for scholarly activities, such as sharing information and resources, asking for advice, promoting work, and networking with peers (Veletsianos 2011). Twitter has often been used in various academic conferences first as a communication tool by using specific hashtags (Ebner et al. 2010). By using official hashtags of those specific conferences, conference organisers are able to disseminate information about the conference and facilitate communication between participants and peers (Letierce *et al.*, 2010). Weller et al. (2011) studied two academic conferences' information flows and citations on Twitter and found that a considerable percentage of users (40% and 27% respectively for the two conferences) used URLs in their tweets, in which some of them are directed to publications. Therefore, in this study, it is worth investigating Twitter adoption for scholarly communication. There is a lack of studies in the literature as how social networking sites such as Facebook and ResearchGate were used to seek and share research information.

The Research Councils UK (RCUK 2013), the major academic research funder announced their policy on Open Access (OA) to the outputs of RCUK-funded research which came into effect on 1 April 2013. There are two main routes to open access: the 'gold' OA, which is based on the model of online open access journals; and the 'green' OA, which refers to depositing published or working papers at open online repositories or personal websites (Björk 2004). To promote Gold and Green OA publications, publishers, librarians, research communities and individuals may announce the publications on Twitter and blogs by including direct links to these online papers. Social networking sites such as Academia.edu and LinkedIn were also found to have enhanced access to online publications and content hosted in repositories (Kelly and Delasalle 2012).

The non-open subscription-based journals by those major academic publishers are online too and each article would usually have a URL link to the page with article title and abstract. Academic Twitter users often cited research articles by either providing link to a page on a social bookmarking service like CiteULike or to a blog post or news article describing and linking to the resource (Priem and Costello 2010). A study of blog aggregator ResearchBlogging.org (RB) found that academic bloggers wrote blog posts citing papers from high-impact journals and most blogs in their sample (72%) had at least one active public Twitter account (Shema et al. 2012). Other social media tools such as social bookmarking sites were found to be popular for bookmarking published journal articles, records in databases and digital repositories (Borrego and Fry 2012). Thus social media services can be good sources for gathering research information, networking with colleagues and keeping up to date with new findings.

Wikis have also gained popularity over the years in higher education and academia. Public Wikis such as Wikipedia were found to have helped university students check facts and find background information for academic purposes (Lim 2009). These functions also apply to academics. A study found that *Wikipedia's* citation rates in scholarly publications had been consistently increasing as Wikipedia was cited 3,679 times in the *WoS* and *Scopus* databases during the previous nine years of that study (Park 2011). Therefore, wikis have become sources for providing research information and references to academics. A study found that the majority of participants (70%) reported reading Wikipedia at least several times a week, although only 16% said they had ever contributed to Wikipedia (Antin and Cheshire 2010).

Hopkins et al. (2013) surveyed academics from two Sciences disciplines and two Social Sciences disciplines which found that women had lower h-index than men in all four disciplines and women were under-represented in academic positions and published less than men. H-index has been adopted to measure individual's research performance which quantifies the impact of an individual's research outputs (Bornmann and Daniel 2007). To fight against gender inequality in academia, women may use new forms of scholarly communication to promote their work and help them find collaboration opportunities through the adoption of social media. However, Shema et al. (2012) found that there were gender disparities in science blogging that men were more likely to write research blogs than women in their sample. A 2010 survey found age and discipline disparities for social media use in research workflow that respondents in Humanities and Social Sciences and those younger than 35 were more likely to be social media users (Nicholas and Rowlands 2011). Thus, it is also worth investigating whether there is any gender, discipline or age disparities in seeking and sharing research information on social media for UK academics in general. Thus this study sets out to answer these questions:

a.   To what extent do UK academics seek and share research information on social media?
b.   Are there disciplinary disparities when seeking and sharing research information on social media?
c.   Are there age disparities for these practices?
d.   Are there gender disparities for these practices?

3. Methods

In order to capture these new practices among UK academic community, we conducted a series of scoping studies using qualitative methods followed up by an internet survey of academics from twelve UK universities. The scoping studies informed the development of the survey and the specific questions which were included. The scoping studies included a review of social media tools and their use, exploratory interviews and a case study of Twitter live chat which were described in Zhu and Procter (2012). The survey questionnaire was piloted with a number of colleagues and the questions were edited before final distribution.

In this study, in order to investigate the proportion of academics who adopt social media for scholarly communication, we decided to target all academics in Russell Group universities as the population for the survey. The Russell group universities were chosen to be drawn a sample from as they all have a strong research focus. Russell Group, which claimed to 'represents 24 leading UK universities which are committed to maintaining the very best research'[1], are well-acknowledged in the world as elite universities for their impact of research. As the nature of this study is a PhD project with limited fund, we used clustering to lower the cost of distribution of the survey. Each university became a primary sampling unit (PSU) and half of PSUs were chosen in the sample. A random sample of ten out of twenty original Russell group universities (before August 2012) and two out of four new group members were selected. In theory, all of the twelve units' email addresses would be harvested from those universities' websites although there would be bias. The exclusion bias resulted from exclusion of particular groups from the sample, such as those having no email addresses listed on their university websites. It is also possible that our techniques failed to harvest certain email addresses from sampled universities' websites.

The email addresses from these twelve universities' official websites were captured using a script written in the Perl programming language and the final numbers of email addresses in the sample was 42,008 after

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[1] See http://www.russellgroup.ac.uk/ accessed 2 November 2013

cleaning up irrelevant addresses. An invitation letter with the author's information, the introduction of the research and a link to the web survey was sent to each email address in the sample and this process was completed by 2 July 2013. The survey was live for around a month and was closed at Tuesday 6 August 2013. We received 1841 responses with response rate at 4.4%. This survey is the biggest of its kind. The response rate is similar as the 2009 scholarly communication survey conducted by Procter et al (2010), which indicates that this kind of response rate may be a common characteristic for this type of internet survey. As we only sampled half of the Russell Group universities, the survey is limited in its representativeness for other UK higher education institutions. However, comparing to the data sourced from the Higher Education Statistics Agency (HESA 2013), our sample of UK academics was broadly representative of the UK academic population as defined by our primary demographic variables of gender, discipline area and age.

The final valid cases were 1829 for this study after excluding problematic cases (two indicated deliberate sabotage and ten only filled in one or two questions). Among the 1829 survey respondents, 46% were female (836) and 54% were male (977). The majority of respondents fell into the age group of 25-34 (31%) or 35-44 (26%). Less than 10% of the respondents were under 25 or over 65. There were 36 disciplines with an 'other (please specify)' option in the original question. These disciplines were listed in the same order as the official 2014 REF categories and were grouped into four discipline areas—medical, biological & human sciences (35%), natural science & engineering (23%), business, law & social sciences (27%) and humanities & cultural studies (15%). This means that 58% of respondents were from Sciences subjects and 42% were from Humanities subjects.

One section of the survey questionnaire asked questions about online services that the respondents used, how frequent they used them, why they started using them and some questions gave options for comments. In order to explore the relationships between reported behaviour on social media and various demographic variables, we ran cross-tabulation of the two observed variables along with Pearson Chi-square test. Chi-square test examines whether there is a real association between two categorical variables. If the significance value p is small enough (usually < 0.05), we can reject the null hypothesis that the relationship between the two variables are actually unrelated to each other (Field 2009). This method of analysis will be used to explore whether there were any disparities by discipline area, age and gender.

4. Findings

4.1 To What Extent do UK Academics Seek and Share Research Information on Social Media?

Table 1: Frequency of gathering & sharing research information on blogs, Twitter, SNS & Wiki

	always		often		sometimes		never		
	N	%	N	%	N	%	N	%	Total
read research blog	22	1%	133	8%	860	51%	662	39%	1677
comment on research blog	3	0%	17	1%	341	20%	1313	78%	1674
post research updates on blog	17	1%	40	2%	204	12%	1407	84%	1668
gather research info on Twitter	25	1%	54	3%	176	11%	1415	85%	1670
post research updates on Twitter	25	1%	65	4%	182	11%	1401	84%	1673
gather research info on SNS	5	0%	59	4%	271	16%	1341	80%	1676
post research updates on SNS	10	1%	46	3%	255	15%	1360	81%	1671
posting ongoing research updates on any of blog/Twitter/SNs	32	2%	107	6%	371	22%	1167	70%	1677
read a public wiki	83	5%	461	28%	739	44%	383	23%	1666
contribute to a public wiki	2	0%	15	1%	250	15%	1383	84%	1650

As shown in Table 1, the vast majority of respondents never used Twitter (84%), blogs (84%) or social networking sites (81%) to publish ongoing research updates or contributed to public wikis (84%). Compared to the low rate of contribution/sharing rate, a much higher percentage of respondents reported using blogs and wikis to gather research information. The majority of respondents (60%) reported having read research blogs and 77% reported having read public wikis in their research work. Only 20% of respondents reported having gathered research information on Social Networking Sites (SNS) such as Facebook and ResearchGate and 15% said to have gathered information on Twitter in research work.

The pattern for the experiences with posting research updates on Twitter (16%) and SNS (19%) is similar to gathering research information on Twitter (15%) and SNS (20%). However, the vast majority of respondents reported having 'never' commented on (78%) or posted research updates (84%) on blogs while the majority of them reported having read research blogs. Similarly, the vast majority reported having 'never' contributed to a public wiki (84%) while the majority read public wikis in their research work. Among the four social media tools reported here, Twitter owned more 'super contributors' who 'always' shared research updates. Wikis had more 'super and frequent readers' who read public wikis as 'always' (5%) or 'often' (28%). However, Wikis had less 'super and frequent contributors' (1% in total) compared to the other three social media tools (all over 3%).

While combining blogs, twitter and SNS together, in total 30% of respondents had experience in sharing ongoing research updates on at least one of these three social media tools. Among these users, 2% were super users, 6% were frequent users and 22% were occasional users in sharing their research information in a novel form.

4.2   Are There Disciplinary Disparities When Seeking and Sharing Research Information on Social Media?

In general, respondents in Humanities & Cultural Studies and Business, Law & Social Sciences were more likely to gather research information and post ongoing research updates on blogs, Twitter and Social Networking Sites, while those in Medical, Biological & Human sciences and Natural Sciences & Engineering were more likely to be non-users for these tools. For example, 22% of respondents in Humanities & Cultural Studies and 21% in Business, Law & Social Sciences had 'always', 'often' or 'sometimes' posted research updates on Twitter compared to 14% in Natural Sciences & Engineering and 12% in Medical, Biological & Human sciences (overall $p<0.001$). The patterns were similar for gathering research updates on Twitter as well as the use of blogs and social networking sites for gathering and sharing research information.

However, for Wiki use, the pattern was slightly different. Respondents in Natural Sciences & Engineering seemed to be most experienced in reading and contributing to public wikis. Natural Sciences & Engineering had higher percentage of 'super and frequent readers' who 'always' (9%) and 'often' (40%) read public wikis while in the other three discipline areas, super readers were all at around 4% and frequent readers were at between 23-25% ($p<0.001$). For contributing to wikis, 24% of those in Natural Sciences & Engineering reported having contributed to public wikis compared to 18% in Humanities & Cultural Studies, 13% in Business, Law & Social Sciences and 13% in Medical, Biological & Human sciences. The contribution gap between various discipline areas were mainly among occasional users who reported 'sometimes' contributing to wikis. Taking in account of all four social media tools reported here, respondents in Medical, Biological & Human sciences were most likely to be non-users of all of them.

4.3   Are There Age Disparities for These Practices?

In general, respondents' reported experiences with gathering and sharing research information decreased with age. In all cases, those aged 55 and over were most likely to be non-users. Respondents who posted ongoing research updates online were more likely to be under 45 years old, having less than 20 years research experiences and having lower job grades. Since research experiences and job grades heavily correlate with age, we focus on age disparities in this paper.

Respondents aged under 35 were most likely to have used Twitter to post ongoing research updates (22%), followed by those aged 35-44 (21%) compared to those aged 45-54 (11%) and 55 and over (4%) ($p<0.001$). The gap between the youngest group (under 35) and oldest group (55 and over) in terms of sharing research updates on Twitter was 18%. The patterns were similar for gathering research updates on Twitter as well as the use of blogs and social networking sites for gathering and sharing research information. The gap between the youngest group and oldest group in terms of reading wikis and contributing to wikis were smaller than the gap for using other social media tools reported here. Around 80% of those under 35 reported having read public wikis compared to 73% of those 55 and over with a gap of 7% ($p<0.001$). The association between contributing to public wikis and age groups was not significant ($p=0.493$).

4.4 Are There Gender Disparities for These Practices?

Women appeared to be more likely to gather research information (18% vs 13%) and sharing ongoing research updates (19% vs 14%) on Twitter (p<0.05). Women were more likely to be 'super users' or 'frequent users' for gathering research information (7% vs 3%) or posting research updates (7% vs 4%) on Twitter. Women were also more likely to gather research information (23% vs 17%) on Social Networking Sites (p<0.05). On the other hand, men seemed to be more likely to contribute to public wikis and frequently read wikis. Around 21% of men reported having contributed to public wikis compared to 10% of women (p<0.001). Men were more likely to report having 'always' (6% vs 3%) or 'often' (32% vs 23%) read public wikis (p<0.001). Survey results indicated no difference between male and female respondents in terms of posting ongoing research on SNS or reading/commenting on/posting ongoing research on blogs.

When comparing gender differences in each discipline area by running a three-way cross-tabulation, it turned out that the gender disparities for adopting Twitter were only significant for those in Natural Sciences & Engineering with a 10% gap between women and men for both gathering and sharing research information (p<0.05). Only those in Humanities & Cultural Studies had gender disparities of 13% for gathering research information on SNS. On the other hand, men appeared to be more likely to contribute to a public wiki in all discipline areas except Humanities & Cultural Studies. Gender disparities for reading public wikis were only significant for the frequent readers in Social Sciences (p<0.05).

When comparing gender differences in different job grades, only female researchers in training were more likely to adopt Twitter to post ongoing research updates and only female professors/readers were more likely to adopt Twitter to gather research information with significant gaps (p<0.05). There was no gender disparity for professors/readers in terms of contributing to a public wiki, but the gap (over 9%) existed for early to mid career researchers.

5. Conclusion and Discussion

This study found that the vast majority of respondents have not yet adopted social media tools to share their research work. This is largely because contribution of scholarly work on social media has not been recognised by academic reward system. The predominant indicator of professional performance for researchers and the institutions that employed them has always been related with the publication of articles in journals and the relative prestige of the journals in which they are published (Merton 1957;Schauder 1993;Correia and Teixeira 2005). Under the academic reward system, individual researcher's career advancement and promotion are often based on their professional performance in terms of the quality and quantity of publications (Kim 2011). Thus the majority of academics still view the traditional distribution channels as most important and have yet to adopt social media for sharing research work, which is in line with findings from Procter et al. (2010a).

However, the new digital technology has changed the way people seek information. As we found that the majority of respondents have had experiences gathering research information through public wikis and research blogs. There was also an increase in the use of Twitter in research work in the past three years. The percentage of academics who reported using Twitter in their research work increased from 10% to 21% compared to Procter et al's survey findings in 2009. Since the benefits of using social media are supported by a number of studies (e.g., Kjellberg 2010;Eysenbach 2011;Zhu 2012), academics who have not yet adopted social media could face a possibility of missing out these benefits. However, there are also risks related to sharing ongoing research, such as leaking results to competitors or having good ideas being stolen, which were asked in the survey and got over 30% agreement from respondents.

Disciplinary disparities were confirmed in this study as respondents in Social Sciences and Humanities were more likely to seek and share research information on social media than those in Sciences disciplines. However, respondents in Natural Sciences were more likely to read and contribute to public wikis in their research work than those in Medical Sciences, Social Sciences and Humanities. This is in line with survey findings from Nicholas and Rowlands (2011) of a range of international scholars. Age disparities were confirmed in this study as respondents' reported experiences with gathering and sharing research information decreased with age. This finding is in line with previous studies which found age being inversely associated to internet and other new media use (Dutton et al. 2005;Helsper and Eynon 2010). Confounding expectations that use of new technology is more easily accepted by men as confirmed by Shema et al. (2012) and Procter et al. (2010b), this study found that women appeared to be more likely to adopt Twitter and Social Networking

Sites to gather research information as well as share research updates on Twitter. On the other hand, men seemed to be more likely to contribute to public wikis in their research work. However, these gender disparity patterns were not the same for those in different discipline areas or job grades. For example, gender disparities for adopting Twitter were only significant for those in Natural Sciences disciplines. For wiki contributors, the gender disparities were only significant for early to mid career researchers and respondents in Medical Sciences, Natural Sciences and Social Sciences.

This study found that academics who adopted Twitter and Social Networking Sites to gather research information were also likely to share research work on those platforms. Those super users and frequent users of Twitter who gathered research information also shared their research work frequently. However, the majority of those who gathered information on blogs and wikis rarely contributed on these platforms and were merely observers of blogs and wikis. As one respondent commented, 'Oh dear, I benefit but don't contribute. Oops.' The patterns of wikis adoption are similar to the findings by Antin and Cheshire (2010) who argued that readers of public wikis such as Wikipedia were not free-riders because readers provided a valuable service to Wikipedia by acting as an audience to help strengthen the rewards that motivate others to participate in more active ways. The reported gaps between seeking and sharing on various social media forms may also because that Twitter and Social Networking sites such as Facebook and Academia.edu are more interactive and require users to register, create a profile, and to connect with others. It requires the users to invest time and effort to maintain relationships such as searching for colleagues and gaining followers on those sites. Many academics may find this distracting and wasting time. While blogs and wikis are more straightforward without having to register or creating profiles in order to find useful resources. As institutional blogs have become more and more popular in academia, individuals can easily be directed to these sites by university News Channels, online newspaper or colleagues' recommendation. Further research would be carried out to explore what other factors are associated with the extent of social media adoption in research work.

Acknowledgements

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Work in Progress Papers

Social Media in the US 2008/2012 Presidential Elections

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Abstract: The last two election years, (2008 and 2012), in the United States (US), social media has played an important role in the presidential elections. Social media experts have marveled at the extent to which President Obama and his campaign team used social media to promote and generate interest among young students and adults alike during the 2008 and 2012 election campaigns. The social media activities of the Obama team transformed politics into a whole new category and changed the dynamics of politics challenging the status quo. In the 2008 and 2012 US presidential elections, we realized that traditional campaigns in the form of rallies and town hall meetings were no longer enough to win elections. In order to win elections, garner support and spread information, politicians will now need to combine new media as well as some of the traditional campaign tactics to win elections. This paper will look at the role social media played in the US presidential elections in 2008 and 2012 and still playing in politics. The paper will also look at the role and effects of social media in the near future on politics and elections as a whole.

1. Background

Before we delve into social media, it is pertinent to understand how social media came to be involved in politics and what is meant by social media. Social media defined by the Merriam Webster's dictionary, is *"forms of electronic communication through which users create online communities to share information, ideas, personal messages, and other content (as videos)"*

The Oxford dictionary describes social media as "*websites and applications that enable users to create and share content or to participate in social networking."*

Thus social media in summary is all forms of online information dissemination, sharing and collaboration. This includes Facebook, MySpace, Twitter, text messages, video messages, YouTube, Instagram, Tumblr and various other blogs and information dissemination sites.

Over the past few years social media has become the mainstream of communication around the world especially in developed countries and has become part of most people's worlds. It has transformed communication to an unprecedented level and an explosion of communication in real time, (Davy, 2010). Communication, cell phone, technology and computer companies had to reconfigure and rebuild their products and technologies to accommodate this information explosion (Maney, 2003).

Social media has affected all aspects of life from family and work relationships, the entertainment industry and even the political world. Very recently we saw how social media was used to generate and garner support to topple various regimes and rulers in the Middle East, North Africa and some South American countries (Safranek, 2012). In the US, the Obama administration used social media during the 2008 campaign to generate interest and garner support for voting. During the 2012 elections the Obama administration built upon their 2008 social media strategies to garner and generate seven more support to win the elections. In the recent night at the Oscar awards on March 2, 2014, the host Ellen DeGeneres twitted a picture of a group of celebrities, (Appendix D), with the desire to break the retweet record (SkyNews, 2014). That tweet garnered more than two million retweets breaking President Obama's 800,000 retweet record.

2. Social Media in Politics before 2008

It is hard to imagine how life was before social networking and instant communication in politics. However, since the Obama administration has revolutionalized campaign politics in the last eight years, it is pertinent to review how campaigns were ran prior to 2008.

Throughout the years in American politics, different strategies were used by presidential candidates to deliver different messages. Aside from the traditional travel campaigns to hold rallies, town hall meetings and fund raisers, Thomas Jefferson in the early 1800s used newspapers to win the presidential election. President Roosevelt took advantage of the radio to not only win the presidential elections during the 1930 depression but also to calm the populace in his famous fireside chats (National Archives, 2012). This restored a sense of calm back into the society and got the banking industry back on track.

John F. Kennedy used the power of television to win the 1960 presidential elections. President George W. Bush built an elaborate and robust phone bank that was the basis for the republican voter lists that propelled the Republican Party to win the two previous elections. From then on election campaigns included a combination of traditional campaign rallies, newspaper and television ads, phone calls and door to door grassroots strategies. This was until the Obama campaign revolutionized everything in 2008.

3. Social Media in Politics - 2008 and After

In the 2008 presidential elections, the Obama administration opened the public's eye in how they used social media and instant communication as part of their campaign to win the 2008 presidential elections. During the 2012 elections the Obama administration even built upon their 2008 social media strategies to garner the buzz for people to vote, thereby helping them win the elections again. What were the strategies used by the Obama team to win the elections and what roles did social media play in these events in 2008 and 2012?

First off, Obama created My.BarackObama.com, a social networking suite which was the backbone of their social media campaign. This suite combined a number of social media outlets, Youtube, Facebook, Twitter, Text messaging, Instagram, Tumblr and maybe others. Combining these outlets with the traditional town hall meetings and rallies enabled Obama to reach people from all walks of life and generations. He was able to penetrate and garner support from the older generation, the younger generation, (Wortham, 2012), the business and working classes and most importantly the technology class.

4. Social Media in Practice

How was Obama able to use the various social media outlets efficiently to his advantage?

One of the highlights of the 2008 elections was when Obama announced his vice presidential nomination through text messaging. Instead of the normal breaking news on the media and TV outlets it was first announced through text messaging.

"Breaking news: the text message is out and it's official... Barack Obama has selected Joe Biden to be his running mate!". (Wortham, 2012).

This was a significant shift from the normal status quo where CNN and other news networks will be the ones breaking the news. Instead the normal people received the breaking news first before the media. A new age was born in politics where the news media were not the sole reporter of current and breaking news and information anymore. There was a new, innovative and instant communication tool that could reach supporters and a vast majority of the global world immediately before the media could even get a hold of it and report it. Nowadays the media is reporting information from Twitter and Facebook which shows that news and information is being funneled through instant communication tools than through the media. The media today is playing second fiddle to instant communication.

Moreover, the Obama team released the Obama08 app where supporters and the public in general could download the Obama08 app on their smart phones and tablets and access news and information about the campaign, follow campaign proceedings, donate funds, reach campaign officers and other tools and resources.

Fundraising was one of the significant contributors that helped President Obama win the elections. Due to their grassroots and community advertising activities, the Obama team was able to raise adequate funds for the campaign. The team has been hailed as the most fundraising team in history, raising a total of $1.4 billion for both the 2008 and 2012 campaigns and most of them through email messages. (Blumenthal, 2012).

On Facebook, Obama created a campaign website that was used to disseminate information to about 32 million followers, the most by any political figure so far compared to Romney's 12 million (Journalism.com, 2012). Supporters and followers could also sign up and interact with the campaign team, make donations or purchase campaign materials and paraphernalia on the Facebook page.

On twitter, Obama had 22 million followers compared to Romney's 1.7 million, (Journalism.com, 2012). Obama and his team used twitter extensively to disseminate information. According to James Arkin, (Arkin, 2012), on a study from a PEW Research Center's Project For Excellence in Journalism, Obama's tweets have been the most retweeted in campaign history and far more than Romney during the 2012 campaign. Obama himself tweets about fifty times a day with photos and videos, replies to tweets and retweets other's twits. This helps with interaction with supporters and also gives them a sense of belonging. For example, Obama's victory picture twit after the 2012 elections, (Appendix A), was the most retweeted in the history of twitter (up

until March 4, 2014, when the Oscar picture surpassed it). The graph below shows the social media activities during the 2012 campaign.

Obama Leads Romney in Digital Activity...

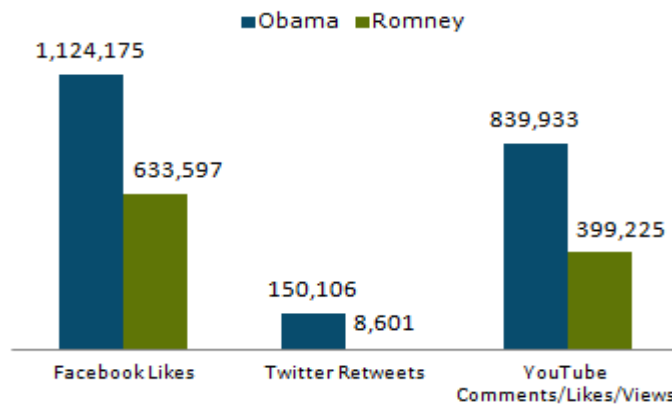*Number of all digital posts studied*

■Obama ■Romney
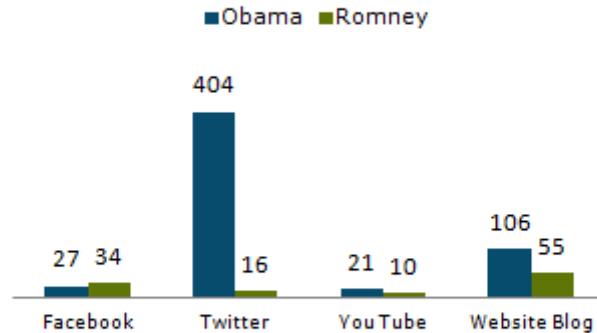
Date Range: June 4-17, 2012

PEW RESEARCH CENTER'S PROJECT FOR EXCELLENCE IN JOURNALISM

...and Social Media Response

Number of all digital posts studied

■Obama ■Romney

Date Range: June 4-17, 2012

PEW RESEARCH CENTER'S PROJECT FOR EXCELLENCE IN JOURNALISM

Journalism.org

On YouTube, Obama created YouTube channel to disseminate videos of different messages. This page had 263,000 subscribers and 262 billion views compared to Romney's 29,000 subscribers and 29 billion views. Instagram was also used disseminate campaign and personal pictures keeping the public up to date on the activities of the president and the campaign.

Most notable however, is Obama's use of Reddit, a social media website where he interacted with the public in a question and answer format, (Murphy, 2012). Obama later twitted an animated picture of himself, (Appendix C), with the caption "Not Bad" in reference to the Reddit session (Lee, 2012). Many at the time had not heard of Reddit thus Reddit became known as one of the new social media tools to disseminate and share information to millions of people all over the world.

5. Adverse Effects of Social Media

Social media has had and will continue to have adverse effects on society. As with everything else, there can be adverse and unpleasant effects if not used properly and social media is one that will continue to have adverse effects if not used properly. There have been stories of unwanted posts, loss of jobs due to misuse and many others to name just a few. During the 2008 and 2012 election campaigns, users complained of receiving messages and newsfeeds they did not request. Countries like China, Iran etc have banned internet and social media use or restricted their uses to prevent unauthorized use and abuse. Will these mediums continue to be used inappropriately? Definitely but it is pertinent to understand that even though social media has its drawbacks when abused or used inappropriately, there is a huge benefit when used effectively and efficiently as shown with the Obama campaign of 2008 and 2012.

6. Conclusion:

Social media has become a very significant part of our modern society and has spread even into conservative politics. The Obama team has redefined politics, instant communication and social media and has taken its involvement in politics to new heights. The paper portrayed how the Obama team used social media in addition to the traditional campaign practices of town hall meetings and rallies to win as well as secure the White house in both the 2008 and 2012 elections. We have also seen how social media can be used to topple regimes and garner support around the world.

Today's politics has changed and society is telling all politicians and public officials across the globe that if they are to gain the attention of all their people and establish a deep penetration into the populace and gain their audience, they will have to use all the media and communication tools available to them to garner and secure the necessary votes to win elections. Without that they might fall short. The Republican Party learned this when they did not utilize all the available communication tools during the 2008 and 2012 presidential elections.

With these lessons learned, the next US election year in 2016 will be an interesting one. We will see what role social media will play during the elections and who will utilize it to the fullest ability. Even before the 2016 presidential and general elections, the 2014 US midterm senate, congressional, legislative, state and local elections will be held. With Oscar host Ellen Degeneres' Oscar twit picture garnering more than two million retweets surpassing Obama's 2012election winning retweet record, these midterm politicians could use this to their advantage by using these instant communication tools to garner last minute support for their campaigns and win the elections. Social media with its instant communication and information is here to stay and we will see how prevalent it will continue to immerse itself into politics in the decades to come.

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Appendix

Appendix A

Appendix B

Appendix C

NOT BAD

Twitted by President Obama after doing a Q&A session on Reddit

Appendix D

March 2, 2014, Oscar host Ellen DeGeneres (pictured in front with white suit), takes and twits the above picture with celebrities in an attempt to break the twitter retweet record by President Obama. They succeeded with over two million retweets.

The Implementation Of Knowledge Management In Sustainable Procurement Using Social Network Analysis

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Abstract: Social and environmental objectives have become major concerns of public procurement law. The decision to procure services or other supplies must be taken in the light of environmental requirements such as carbon reduction. There is the drive to enhance these policies in the European Union (EU), where they have been integrated into the public procurement laws. The United Kingdom (UK) as one of the EU member states has implemented the EU directives into their public procurement laws. We believe information infrastructure can play a significant role in supporting community of practice concerned with 'sustainability' policies. Appropriate information system (IS) can facilitate the processes that embed sustainability in organizations, particularly, the exchange of appropriate information or knowledge among those involved. Knowledge relevant to sustainability in organizations needs to be managed so that it can be preserved and re-used when it is needed. The key aims of the research are to identify and improve the ways staff communicates with each other about sustainable procurement (SP). A subsidiary aim is to evaluate Social network analysis (SNA) as a mean to illustrate the communication networks in order to improve knowledge transfer/sharing among people within the organisations. As a starting point, a university was chosen as an initial exploratory case study for this research that is currently followed by other public bodies. Initial interviews were conducted with the key players in the range of different roles to identify the communication networks relating to sustainability and procurement departments to which they belonged. The initial focus is to examine information technology (IT) procurement. The preliminary findings have shown that there are two largely separate networks existing in the university with little communication relating to procurement and sustainability respectively.

Keywords: sustainability; public organisations; sustainable procurement; Social network analysis; knowledge management.

1. Introduction

Sustainable procurement (SP) is a subset of green supply chain management (Bai and Sarkis 2010). The concept of SP has evolved from an organisational concern to reduce waste into green purchasing which incorporates a broader environmental awareness (Björklund 2011), for example the purchase of energy efficient equipment to reduce carbon emission. This includes looking beyond the traditional purchasing criteria such as financial factors, quality and fitness for purpose by taking into consideration some additional social and environmental factors when making decisions such as whole life costing and the broader implications for society and environment (Interagency Procurement Working Group UN 2006). Organizations that implement sustainable procurement need to manage their knowledge in order to create new knowledge to guide the successful implementation of SP. The introduction of knowledge management technology such as expertise location, text-based chat and unrestricted bulletin boards (Marwick 2001) could help in transforming the procurement system to be effective and to increase its efficiency. Those technologies could support the process of creating, reusing, measuring and optimising knowledge in sustainable procurement.

The structure of the remainder of this paper is as follows: Firstly, this paper discusses the importance of knowledge management in SP. Next, the methodology is described. Then, preliminary findings discuss on the current situation of networks dealing with SP and finally this paper discusses on the challenges and future works to be carried out.

2. Research Background

Encouraging organizations to implement SP is not easy, thus governmental pressure may be required. Greening or integrating procurement with the sustainability element is crucial to reduce environmental impacts and is considered fundamental by the EU (Tarantini,Loprieno and Porta 2011). The EU suggests that information related to procurement should be shared among consumers and buyers, in a form that can be easily archived (European Commission 2003). Haythornthwaite (1996) identifies the resources transferred along the supply chain as either tangible (for instance, money and goods) or intangible products (such as information and influence). In our research, we are concerned about both information and goods as types of

resources being transferred. There is some research that concentrates on knowledge/information seeking as a type of resources exchange, for example Cross, Borgatti and Parker (2001) and Haythornthwaite (1996).

According to Newman and Rhee (1990), the main problem of product suppliers is poor communication with buyers. We have already noted that to ensure the most effective inter-organizational relationships, one must emphasize the importance of knowledge management, which focuses on communication and information sharing between organizations (Mohr and Nevin 1990).This can support the effort of buyers to improve supplier performance (Modi and Mabert 2007).

In the research carried out by Chauvel and Despres (2002), the reasons why organizations are so interested in knowledge management practice were explored. The ability to create new knowledge that could lead to innovation within the organization was seen as key. Liebowitz (2005) stated that there are several forms of innovation such as improved business processes, improved products or services and improved customer relationship management. Knowledge innovation is very important in the context of sustainable procurement because the improved products or improved customer relationship management could help an organization to achieve their sustainability aims.

A tool that is able to map the relationship in organizations has been identified, known as social network analysis. SNA appeared to be a useful tool as it could identify and analyse the pattern of communication for knowledge management in an organization (Anklam 2002). While the formal organizational chart in the organizations does not normally show the accurate knowledge flow, SNA could help to map the more accurate networks of knowledge flow (Chan and Liebowitz 2006). It can be used to understand the key relationships in organizations. An example of the use of SNA is in Cross,Borgatti and Parker (2001) which tried to identify what is transferred to an individual who needs work related advice in an advice network. He found that there are five unique ways of how people share work-related information when asked for advice. They will normally help people by: 1)providing a solution; 2)meta-knowledge; 3)problem reformulation; 4)validation and 5)legitimation. It is clear that the interview technique is very relevant to gathering information on the relationships among the staff in the organizations.

3. Methodology

The University of Brighton (UoB) was chosen as a suitable public sector organization with which to start exploratory data collection. In this research, the networks that are involved in sustainable procurement are identified. There is a procurement department in UoB which was an entry point to the procurement community, but another community was identified in UoB that involved in sustainability. Data collection began by conducting initial exploratory interviews with the key people in sustainability and procurement activities of the organization. During the interviews, a snowballing technique (Prell 2012) was adopted to identify the next people to interview list. This technique requires the interviewee to nominate the names of other people who may be relevant. Interviews were then scheduled with the people that are being nominated by the interviewees for the two communities. The interview respondents consisted of people from different roles and backgrounds in fulfilling procurement requests from the users and also those involved with sustainability in UoB. Data that is obtained from the interview will be used to generate a social network map using SNA software. The social network map enables us to identify the central people in the network and what kind of information that is most influential and required the most by other staff. From the map, those who are not well connected can also being identified. Appropriate solutions can be proposed to improve the network's ability to share knowledge (for example, skill profiling system, subject matter expert).

4. Preliminary Findings

Based on the data that has been collected so far, it shows that there are two separate networks that exist in the university relating to procurement and sustainability respectively. The networks have a very small overlap, which indicates little communication happens between them. Sharing knowledge related to sustainable products (for example, selection criteria) among staff who sometimes act as buyers in the organisation seems important to ensure they understood the importance of procuring sustainably and are able to choose the sustainable products that meet all the selection criteria. In practice there appeared to be a process of delegating product selection to other parties (that is, the university buying consortium). The strength of communication in the sustainability network is stronger compared to procurement because 1) There are a

number of groups created to support sustainability in the UoB and 2) the Procurement network is quite dispersed because people who do procurement in one department do not necessarily know people who do procurement from other departments. The staff who want to purchase IT equipment will normally delegate responsibility in identifying green criteria of certain products to the experts in central university IT service, which means that the decision making in buying sustainability products is treated as 'black box'.

5. Future Work

In the next stage of this research, we will be looking at other public universities in England. Data will be gathered by employing the successful interview technique used in the UoB before being translated using SNA. While SNA is useful to illustrate the connections among people, there is still a challenge in dealing with the type of networks in this research. SNA works well with homogeneous network (consist same type of actors) and not suitable for heterogenoues network (consist different type of actors). From the preliminary findings, it seems that both networks are heterogenous, so the use of SNA needs to be modified. Further work need to be carried out in identifying ways to address this issue.

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Wisdom of Crowds or Mob Mentality

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Abstract: Media presents in a variety of platforms such as electronic, multi, digital, news, broadcast and social media. Reddit is a popular social media platform, which self-professes to be the 'Front Page of the Internet.' It has the capability to harness the wisdom of crowds, or fuel the mob mentality. This paper will examine positive and negative Reddit crowdsourcing.

Keywords: Crowdsourcing, Social Media

1. Introduction

Alice E. Marwick (Marwick 2013) states that social media, as a democratic process, has become a tool prioritizing profits and violating user privacy. Violation of privacy is frequently highlighted in the news, and consumers are now growing to understand the lack of privacy when agreeing to use social media platforms. Signing EULAS (End User Licencing Agreements) or TOS (Terms of Service) involves reading a long document, with fine font, and complex language. Between December 2013 and March 2014, in-class surveys of 152 computing students revealed that 11 (7%) read EULAS/TOS before using social media or installing new software.

To participate in the Facebook community, one is required to provide a first and last name[1], email address, password, gender and month/day/year of birth. One then clicks a button, acknowledging that s/he has read the 42 pages of documentation discussing rights and responsibilities of the platform and users. It is a platform with clear ownership, and an interface that changes frequently, to the dismay of the users.

Reddit is an open-source platform accessible with a self-generated username and password (with the option of providing an optional email address for password recovery.) Users have a voice and are part of the development process. They post opinions, images and links to news items. With 5.5 billion page views per month, and 113.8 million unique visitors, from 175 countries, Reddit is global. During an online interview session with Tim Berners-Lee (creator of the World Wide Web), he was asked, "What is the thing your [sic] most proud of about the world-wide web." He responded, "The wonderful global collaborative spirit of all people who turned up to help build it and build things on it." It is this global collaborative platform that is the spirit of Reddit, and has led to both positive and negative outcomes.

According to Clive Thompson (Thompson 2013), there are 500 million tweets on Twitter, and 16 billion words entered on Facebook daily. Twitter allows one user's perspective to reach his/her followers. Facebook allows comments and the post can receive a 'Like' represented by a 'Thumb up' icon. Posts are limited to "friends"[2]. Globally, there are 12 billion SMS (cell phone) texts sent daily. The texts are sent to user-specified recipients, one to one.

With a many-to-many approach of information-sharing, Reddit, like other platforms, has taken advantage of economies of scale and facilitates the sharing of information to the masses. One of the most popular subreddits on Reddit is IAmA("I am a…") where a Redditor posts a subject line, and other redditors ask questions of the IAmA redditor. President Barack Obama hosted this subreddit in 2012, that was upvoted by 14,750 people, and viewed by 5.6 million people. Bill Gates was second in popularity with 8441 upvotes. Upvotes are made by Redditors who like the post. Participation can be passive (upvoting/downvoting) or active (posting a comment.)

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[1] Facebook's registration system even attempts to prevent the use of cryptic or made-up names.
[2] Privacy issues arise though, because posts can be shared, and posts on which a user comments can be seen by their friends who may include users the original poster did not intend the post to be seen by.

Reddit has a diverse and vocal population. Redditors draw information from multiple sources to support their individual perspectives. Redditors read comments and individuals formulate opinions. With a subreddit such as Obama's IAmA, the difference between mainstream news and a social media platform is in the real-time nature. Unlike a sound-bite in broadcast news, Reddit interviews become a discussion. Tough questions and kudos are both raised, and participants learn from both the process and the content.

Another subreddit, called Meddit, discusses medical issues. Reddit provides a very clearly phrased disclaimer. A Redditor asked for advice about obtaining insulin for his mother, who had been denied Social Security, Medicare and state care. Within several hours, the Redditor received information about over-the-counter insulin, a savings program for Lantus (a diabetic drug), and a local helpline specific to the Redditor's community, as well as informing the Redditor that Americans can no longer be denied heath care due to pre-existing conditions such as diabetes. When one Redditor suggested the over-the-counter insulin, another Redditor quickly pointed out that incorrect insulin usage is a recipe for disaster. This is one example of the many instances of Reddit's crowdsourcing.

Crowdsourcing (Howe 2006) is defined as "outsourcing to the crowd." It is an online problem-solving model, involving feedback and suggestions from those who are interested. Van Ess (Van Ess 2010) says "Crowdsourcing is channeling the experts' desire to solve a problem and freely share the answer with everyone." With Reddit, there are experts sharing multiple perspectives, and the most popular suggestions rise to the top. Reddit has become a de facto alternative to journalism; a "collective journalist" demonstrating a willingness to be accountable and to learn from errors.

The missing Malaysia Airlines Flight 370 demonstrates Howe's term, "crowdsourcing." Figure 1 shows the information gathered (in what is now 14 parts at the time of this paper's submission) from Redditors around the world, establishing a focal point for people to follow the tragedy. There are clear Public Service Announcements (PSA's) providing guidelines for appropriate behavior, and repercussions for non-compliance.

Figure 1: Malaysia Airlines Flight 370 timeline

Figure 2 (below) provides more details. It is organized into a resource section, a live chat, an auto-refresh comment stream; links to press conferences, satellite images, and a crowd-sourced map hunt (Tomron.) Reddit used the wisdom of the crowd to collate information in a coherent and updated fashion. Errors are challenged, noted and corrected. And one thought leads to another, as people around the globe interact to solve a problem on the social web.

Figure 2: Malaysia Airlines Updates

Within a social web, Rheingold refers to four components of trust that support a successful community. (McKnight 1988)   The first level is calculation-based, which is a cost/benefit rationale. "If I participate, what do I gain?' This level involves a clear decision-making process based on facts. Within the Reddit community, the cost/benefit ratio is reasonable: cost is the amount of time a person spends in the forums, and the benefits are high amusement value, pride of contributing and knowledge gained.

The second level is personal-based trust. People use past experiences to make a decision to trust. Reddit's anonymity prevents users from knowing each other, unless they send private messages to exchange personal information. Redditors can examine the past history of comments to gather information about each other, making subjective decisions about trusting the platform and its users.

The third level of trust is based on an instant connection one feels to a person or thing, based on belief systems, values and a rapport that is established in various subreddits. While the anonymity exists, over time one can get a sense for another Redditor's style and trustworthiness based on past contributions to the community.

The final level of trust is based on a formal structure. Reddit has rules and measures are put into place to protect Redditors. There are collectively determined rules of behavior/norms, modifiable by the community. It is this sense of community that Rheingold first discussed in 1993. His vision of a virtual community was one where people united in a "cross cultural grab bag of written conversations known as IRC Internet Relay Channel." (Rheingold 1993)   Over two decades later, the only change seems to be the platform itself. Instead of IRC, people have a myriad of options for social media interactions.

Successful crowdsourcing entails multiple criteria. (Rheingold 2012)   The population must have a collective vision, enough skilled people to sustain the vision, a solid reputation, and shared values. Reddit is a very successful crowdsourcing tool. There is a willingness to act on events due to high interest levels and a desire to problem-solve. The willingness to cooperatively act within groups began at a base level of humanity, when culture determined how people from different backgrounds interacted. Technological changes and the rise of social media have permitted a diverse population a tremendous and very rapid opportunity to effect change. (Boyd et al, 2003) When group boundaries are clearly defined, good design principles support change from within the group, full participation, and a system that self-monitors. (Olstrom 1990) As a social media platform, Reddit is simultaneously philanthropic, educative and controversial.

In April 2013, the Boston Marathon was bombed. Reddit established a subreddit called "FindBostonBombers" and crowdsourced to investigate evidence available to the public. Reddit provided an opportunity to share and examine visual evidence, discuss the bombing, and analyze the tragedy. Redditors donated pizzas to the hospitals and police, offered housing and transportation, and set up a relief fund.

The analysis, however, went too far and over-enthusiastic Redditors made allegations. Suffering from a case of groupthink, (Janis) not enough analysis was given to all possibilities, and Redditors drew a conclusion that had serious repercussions. Damage from reporting on unreliable or incomplete information results in a "trial by

social media." This is mob mentality; Redditors were zealous about doing 'good' and enthusiasm led to misguided assumptions and inappropriate actions.

The moral responsibility of media is clear: be sure before accusing/identifying. But in the desire to be 'first,' both mainstream news and social media platforms err. Mainstream news reporters are professionals and have a greater obligation to be sure of their information. Social media platforms become a venue for 'volunteer sleuths.' Being socially responsible, the Reddit community learned from the misidentification of the Boston Bomber and new guidelines were suggested for future situations, and the general manager of Reddit issued a public apology.

But Reddit's crowdsourcing has been used in a positive way as well. SOPA (Stop Online Piracy Act) was an American government effort to censor the Internet. The overwhelming collection action of Reddit led to an internet blackout on Jan 18th 2012, from 8 am – 8 pm. Not long after, other powerful platforms, such as Wikipedia, followed suit. The wisdom of the Reddit mob trickled over into other forms of media. Reddit thoroughly researched and organized actions supported by the collective. Berners-Lee suggests that "The Web is a primarily neutral – tool for humanity…[that] can be used for good or ill. " He feels that the 'badness' of communication comes from misunderstanding.

Ethan Zuckerman, author of "Rewire," states, "…we need to paint a broad, global picture so that we can anticipate threats, seize opportunities, and make connections." (Zuckerman, 2013) The collective power of crowdsourcing can be proactive in seizing opportunities and problem solving. It also has a responsibility to ensure accuracy through community review, like the Reddit platform. Reddit serves as a social platform providing opportunities for social change, problem solving and news sharing with interpretations from a range of Redditors. Unlike the one-way presentation of information through traditional news media, the Internet is a ball of multi-coloured yarn. Diverse, dense, intertwined, and able to be unraveled by many opinions, establishing connections through collaboration. The connections should be used to harness the wisdom of the crowd, and not foster the mentality of a mob.

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The SHU Social Media CoLab: Developing a Social Media Strategy Through Open Dialogue and Collaborative Guidance

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Abstract: This paper shares the strategy we have developed at Sheffield Hallam University (SHU) to educate and guide staff and students in their use of social media. Students need to understand their responsibilities to themselves and the institution, to develop sustainable strategies for using social media to enhance their learning and to develop their employability skills as future graduates. They need to place value in the development of a professional online presence, appreciate the difference between their personal and professional uses of social media tools, and understand the impact that one can have on the other. Staff want to feel confident in the application of authentic social media learning activities. They need to see the value of social media competence in graduates within their disciplines, and easily access shared practice and guidance. To facilitate such learning activities they also need to understand and consider aspects such as online safety, professional impact and configuration. We discuss how we developed and are now implementing our strategy; how this features a strong emphasis on collaborative relationships across different areas of the institution; and our recognition that social media guidance is not the sole domain of any one team. It also considers the importance of digital literacy skills, and that care is needed in the management of sometimes conflicting priorities. We will show how our work is informed by the needs and priorities of our staff and students in order to be fit for purpose. Our initial findings showed that we must address the constantly evolving nature of social media, and not consider guidance that we develop to be finite - there will always be more to do. In addition, we must acknowledge the significant overlap between personal and professional use of tools, since one might easily have implications for the other (positively or negatively), and people often draw on experiences for different contexts, or allow their future practice to be dictated by them. We will include how we have engaged staff and students to revisit their digital literacy skill set and develop new ways to connect, communicate, collaborate, create and curate. The enablers to achieve these outcomes include a rich collection of resources using different media, the development of a 'Social Media CoLab' and communities of practice exploring, using and evaluating their use of social media; and the support of the university to embed the use of these and other technologies to enhance the learning experience.

Keywords: social media, digital literacy, social media CoLab, community of practice

1. Introduction

The authors are three colleagues with roles connecting to Technology Enhanced Learning (TEL). One works centrally supporting TEL across the university, one is a Faculty Head of Learning, Teaching and Assessment (LTA), and one is a faculty-based TEL developer.

This work was not commissioned as a project. It evolved from an initial response to staff asking for clarification on student use of social media. The nature of our roles and our instinctive approaches placed us perfectly to respond. We have articulated our approach into a set of strategic elements that will underpin the future direction of social media guidance at SHU. What emerged through this process was the desire from both staff and students to contribute to this and the wider use of social media.

2. Context and Background

Social media within an educational context (and for some personal/social) is still a relatively new phenomenon with many participants still at the start of a learning curve needing advice and guidance. With such a vast and constantly evolving area there are two main perspectives to consider. How we effectively use social media as a university and how we, staff and students, use social media in a personal context, understanding the implications. It this latter point that has been the catalyst for a call to bring together support and guidance that can be used by staff with their students. Our use of social media as an organisation may include: the support of learning and teaching; university-wide, departmental or team communications (internal or external); or as a means of creating communities of practice.

Social media is rapidly and broadly becoming established as a necessary method of communication, organisation and collaboration, regardless of context. The New Horizons Report (NMC and ELI 2014: 8) refers

to the growing ubiquity of social media and state that 'understanding how social media can be leveraged for social learning is a key skill for teachers, and teacher training programs are increasingly being expected to include this skill'. Despite evident affordances there are concerns that without constraints in place social media will have serious implications for corporate brand and identity. There are many examples of where blurring of social and professional boundaries have led to unfortunate outcomes. Rather than block such activity (which will continue to take place in personal spaces anyway), far better that we develop the digital literacy skills of staff and students and indeed recognising and rewarding digital scholarship (Weller 2011).

3. Digital Literacy

Effective use of social media requires digital confidence in the use of new tools for connecting, collaborating, creating and curating. An individual's attitude to print, visual, audio and digital media can have an impact on how they may or may not integrate such technology into learning and teaching (Hobbs 2011). Our working relationship with the directorate responsible for Information Technology has been key to the success of our project. Creating a hub of social media good practice and resources requires a dedicated online space and the support to do this.

4. Space and Place

An online 'affinity space' (Jones and Hafner 2012:115) or 'social media colab' (Rheingold 2008) offers opportunities for colleagues to raise questions and build communities of practice. Providing a trusted and welcoming forum to begin the conversation at a level that is comfortable is crucial. Conversations are new and indeed the language associated with the tools (DM, retweet, embed code, dashboard etc.) could act as an inhibitor, deterring someone from trying new things. We found that a blend of face-to-face and online is key to developing confidence in this area. Our social media CoLab therefore became a fluid social space, enabling the formation of a collaborative network to engage in dialogue around social media.

5. Unpacking the strategic approach

These are the elements that have shaped our progress so far, and are now being applied as a strategy for future direction and development:

- **We recognise the boundaries of our responsibility**
  As three staff with TEL roles, our primary concern is the effective use of social media in LTA, however we saw a need and informally extended the boundaries of our responsibility to include all staff and students.
- **We prioritise needs based on resources and potential impact**
  We are selective in the guidance we provide. We seek to cover general themes where it is appropriate to provide a SHU perspective, and in the case of LTA, supplement these with case studies. Our aim was to be as complete as possible, within the identified boundaries of our roles and the resources available to us.
- **Collaboration is championed**
  Social media is not the domain of any one department or team at SHU. In order to avoid duplication of work we monitor for others with an interest in social media, raise awareness of our work, make a point of approaching others when an overlap or a common interest has been apparent and update senior staff. Ultimately, we understand the value in being approachable to anyone with an interest in our work. We are interested in the 'conversation' and believe collaboration will provide sustainable high quality social media guidance at SHU.
- **Value is placed in listening to staff and students**
  In addition to the CoLab sessions being a space for sharing ideas and practice, we used them to listen to staff as they explored their thoughts, concerns and ideas about social media. Through this we were able identify main themes and define university priorities. We also shared these back with senior staff from other areas (IT support, Library services, Secretariat) so that the conversations could be heard more widely.
- **The constant evolution of social media is understood**
  The ecosystem of connective media in a growing culture of connectivity (van Dijck 2013) will continue to present new considerations, meaning that guidance should be reviewed regularly for changes in trends, behaviours and functionality. However, there is a 'line'. We are only able to pay attention to

the big themes, and must develop an effective model of referring to external resources and cultivating users' skills in seeking and finding the guidance they specifically need.

▪ **We challenge and question**

We look to build an open understanding and where our evidence allows us, quashing the myths behind social media in higher education. Social and digital media present the very tools to open a forum for discussion, but should not be used exclusively. Encouraging questions is important and so is looking to provide different approaches and spaces to do so.

▪ **We believe that guidance must be inclusive**

Our approach should enable any of our users to access or locate elsewhere guidance no matter what their starting point. In this field the digital divide can be particularly obvious, those with confidence and a vision may find it easier to develop a teaching approach embedding social media very easy, while others need to know the absolute basics.

▪ **Authenticity is promoted**

Helping colleagues and students understand that the affordances of new technology and in particular social media is 'not peripheral but fundamental to all aspects of scholarship' (Weller 2011:173). This works best where authentic and contextualised examples are shared.

6. Outcomes and next steps

The project is ongoing and is still in its early stages. A set of resources have addressed the immediate need for student guidance on responsibility, security, digital footprint and using social media strategically. These will be periodically reviewed and adapted to ensure currency. By the summer (2014) a similar approach will have been taken for general staff guidance. We are making distinctions between resources that need to be developed in-house for the SHU context, and where they exist elsewhere, but can be linked to.

http://go.shu.ac.uk/socialmedia

The CoLab is our starting point for establishing staff guidance and ran in a world cafe style forum. It began with short show-and-share presentations and followed with detailed discussions with the presenters at tables. In the future we will continue to develop the community of practice using a variety of social media tools as well as face-to-face sessions. Meanwhile, student projects are addressing the points raised in the leaflets and are creating digital artefacts in the form of animations, film and infographics. Early adopters are writing case studies to share how they have used in learning and teaching. As priorities are identified as a result of the CoLabs, we will develop a digital home for resources, environments for discussion and support for the use of social media in LTA. This is a collaborative project that is alive and ongoing, drawing in the voices of both staff and students. It is a growing community of practice, developing through sharing and openness.

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Evaluating Academic Conference Discursive Development using Twitter and the Blogosphere

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Abstract: This paper seeks to advance understanding of how and why social media, in the form of Twitter and the Blogosphere, are being utilised alongside academic conferences and epistemic communities, an area with limited and fragmented research attention. Exploratory and purposely panoptic webnographic research is presented with a focus on form, usage and content. It provides an initial exposition of core themes; user intentions, behaviours, agency and relations; structures of communication; influencing capabilities and the recursive association between Twitter and blogging. This examination surfaces particular interpretation challenges in relation to the unstructured nature and high-dimensionality of microblog data and the frequently disjointed resultant dialogue. An original methodological approach is proposed to enhance understanding of how meaning is made. ECSM 2014 offers a pertinent dual physical-virtual research site and forms part of a mixed methods longitudinal study across six academic conferences. It embeds in-situ sensitivity to the context of occurrence to aid data interpretation and integrates objective quantitative social network evaluation alongside subjective situated qualitative insight. This aims to identify and stimulate opportunities for shared value across the research, practice and pedagogical continuum, including discursive development, knowledge co-construction and conference amplification.

Keywords: Discursive Development, Conference Amplification, Twitter, Blogs, Social Media

1. Introduction and Aims

Academic conferences benefit epistemic communities by providing a domain focal point, promoting research impact, catalysing discursive developments and collaborations, creating collective learning experiences and shared discourse, and establishing and maintaining cohesion and identity (Denkus & Esser 2013). This is salient to the inaugural European Conference on Social Media as it aims to establish an academic and professional platform to address this rapidly emergent field. As conference participation and socialization opportunities enable physical proximity to connect individuals with likely synergistic interests; so social media can afford scholarly relevance and value via virtual proximity to events and the enablement of peer engagement, network development, discipline awareness, research promotion and new project instigation (Ross et al. 2011; Kelly 2013).

The research serves to advance understanding of how and why Twitter and blogging are employed and by whom. Are they adopted to transmit factual event information, to reproduce or reaffirm conference themes, or can they promote active questioning and motivate progression of the dominant discourse? The work also aims to surface conference amplification capabilities (Kelly 2013) so that within-event dialogue and subsequent online discussions can be optimised for attendees and a broad potential audience, alongside supporting future planning, domain reach, participatory culture and diverse stakeholder benefits. This focus is catalysed by the authors' practitioner experience in learning technologies, a research and pedagogical interest in enabling polyphony, and both participant and committee membership of events such as ECSM 2014.

2. Literature Review

Social media supports diverse participation, **democratisation of access** and transparent communication at scale to enable community dialogue, extended commentary, social reporting, social sensing and the facilitation of new knowledge management capabilities; providing a scaffold for information sharing, knowledge co-construction and the tracing of learning (Holotescu & Grosseck 2010; Ross et al. 2011). The decentralised, user-centric orientation of Web 2.0 opens up active contribution and supports a digital backchannel to academic conferences, countering criticisms of one-to-many transmission associated with traditional settings (Reinhardt et al. 2009). Twitter and blogging present differences in nature and form but it is argued, can be mutually reinforcing and pertinent to discursive development, facilitating a dialogic of one-to-many interaction. Extant studies are typically fragmented in nature (Denkus & Esser 2013), with attention to a single or limited range of events; a specific epistemic community; address either blogging *or* microblogging; and lack methodological fusion between in-situ and digital data capture.

Blogs increasingly contribute to scholarly communication (Ross et al. 2011) and comprise chronologically arranged text, media objects, images and data within an online post, typically with an affordance for feedback. Blogs present unrestricted data sets of semantically interlinked statements which detail author views, interests and/or experiences and may be illustrative of motivations and sustained perspectives, potentially leading to online community formation (Banerjee et al. 2012). This emancipatory space can promote learning and reflexive practice, from supportive peer environments to a global platform to explore ideas, *opened up* to cross-disciplinary feedback that can benefit academic development.

The microblogging site Twitter is an agile, lightweight and pervasive social awareness stream that connects a diverse online audience (Reinhardt et al. 2009), enabling users to build a profile and articulate connections (Ross et al. 2011). It can be indicative of spontaneous, short and real-time intentions (Banerjee et al. 2012), providing a means to participate in, and learn from, community-event streams. The accumulative impact and structural properties of messages can also elucidate longer-term interests and intentions, alongside identifying networking and learning relationships (Holotescu & Grosseck 2010). Specific operators facilitate varying modes of interaction and communicative functions that *move beyond* technical affordances to foster strategic participation and discursive network creation via addressing, tagging, republishing and linking.

3. Exploratory Methodology and Early Findings

A webnographic approach enabled a broad initial examination of Twitterverse and Blogosphere conversations associated with academic conferences. Webnography can support distanced, unobtrusive observation which does not influence the habitus and is therefore congruent to an exploratory investigation using historical and pre-formed public data (Evans 2010). The intent was panoptic and covered the period 2008 to 2013, exploring a range of European based multi-sessional events aligned with different epistemic communities. Social media archival features such as Tweetdeck, curation tools including Storify and the evaluation tool NEXTAnalytics aided this process, with keyword searches made on conference titles, linked abbreviations and dedicated hashtags.

A purposeful, cross-discipline data selection enabled focus on 70,000 tweets and 560 blogs. These were considered as an overall corpus and as an aggregated set per event, seeking to situate the data as part of its larger discourse, collective environment or community of practice (Ross et al. 2011). The evaluation consisted of a quantitative assessment of user conventions alongside the qualitative categorisation of posts. Attention was firstly orientated towards *form*, namely original tweets, @replies, retweets and tweets containing URLs in respect to Twitter; and simple text, embedded media objects, images and/or data in relation to blogs. Content analysis was employed to identify *usage-indicative* and *content-indicative* key words (Banerjee et al. 2012) and support the identification and classification of themes regarding intentions. A high-level synopsis of findings follows.

The majority of Twitter activity was original tweeting (70%) with frequent addressing and referencing of users, whilst simple text was most typical for blogs (55%) embedded with images (20%). A small minority of contributors produce a disproportionately large amount of tweets alongside a long tail of occasional tweets, which is indicative of core close ties within academic groups. In respect to blogs, there is evidence of greater diversity and inter-discipline dialogue, with the affordance for comments enabling dialogic opportunity. Community self-organisation is observed via the creation of quasi-official and unofficial back-channels and the use of tools such as Storify embedded as links to blogs, providing a personal curation of professional event streams. Further, participants arrange outside-of-event meet-ups which also emphasises the continued importance of physical community dimensions.

A recursive relationship between blogging and microblogging emerged in relation to content promotion, development and identity management, specifically developing a digital presence and relationship building. There is also greater evidence of codification (note taking) and sharing of experiences rather than a deep co-construction of knowledge and extended commentary or thematic debate with respect to conference presentations. Event reporting through commentary and summarisation is therefore a more typical focus as opposed to the wider distribution, (re)definition, debate and development of ideas, particularly when using Twitter. Specific blogs do afford more critique, idea incubation/expansion and discourse questioning.

Further, the challenge of managing, interpreting and optimising the potential of large data volumes, across different data types, was foregrounded. In respect to Twitter, a perceived gap in understanding surfaced in respect to navigating the disjointed, sparse and highly-dimensional data; the colloquial, truncated and unstructured writing style; a resultant discontinuity of dialogue and ambiguity regarding contributor roles. It is opined that the communication acts and specific statements of contributors and how these *take on meaning* can therefore be best understood by developing the fullest appreciation of the context of occurrence and the syntactical relationships within.

4. Emergent Methodology for ESCM 2014 and Longitudinal Research

To gain fuller understanding that facilitates in-depth discovery alongside a capacity for initiatory generalisation, a sequential exploratory mixed methods approach is proposed with ESCM 2014 employed as a physical-digital ethnographic case study. Twitter posts and weblog data linked substantively and temporally to the conference will be captured pre, within and post event, and integrated with data obtained through situated research. With reference to blog evaluation, *a similar approach to the exploratory phase is planned.* In respect to Twitter, data-driven visual network analysis will be incorporated to benefit relationship illustration, pattern identification, information overview, problem-solving and knowledge type communication. Calculations of tweet reach/impressions will be included alongside a breakdown of the distribution or dominance of user contributions. Establishing peaks of interest and relating this to specific conference sessions and subjects will also be explored, alongside *patterns of language use and linguistic style.* In-situ researcher observation can be fused with direct participant discussion and a small anonymised qualitative survey to ascertain attitudes regarding the Twitter enabled backchannel in respect to utilisation, motivation, effectiveness and intersections with other social media conduits. The approach is *context sensitive* reflecting the manner in which discursive development and discourses can be shaped, the propensity for individuals to communicate in more than one discursive mode, and the emergent nature of processes of valorisation. The augmented methodological approach will be extended to form a larger longitudinal study, from which findings can be assessed as individual cases and as an aggregated data set. This is supported by author participation at six academic conferences operated by ACPI, the Oxford Academic Research Network and the British Academy of Management in the period to September 2014.

5. Conclusions and Benefits

The exploratory findings elucidate microblogging as an integral content-orientated and participant-enabling backchannel of academic conferences and epistemic communities, with blogging occupying a recursive role that supports extended commentary, content promotion and development, and identity establishment. It is posited that challenges in event stream interpretation can benefit from a mixed methods approach that merges objective quantitative social network evaluation with subjective situated qualitative insight, reflecting the intersection between digital and physical place. The research addresses identified literature gaps and can advance understanding of fragmented dialogue, distinctions in roles, usage, language and motivations, alongside the determination of discursive development value and legitimacy. This may aid conference amplification in respect to future planning, co-organisation, structuring, facilitation, marketing and the tailored, integrative use of social media management and curation tools.

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Social Recruiting: Towards a State-Of-The-Art Synthesis

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Abstract: The fact that social media have permeated organizations of all sizes and from all industries is no longer debatable. Over the last few years, social recruiting has become an established practice in human resources management. The popularity of social recruiting among practitioners has spawned growing scholarly literature, starting with conceptual and descriptive papers, and progressing towards more and more empirical studies. Anecdotal evidence abounds on the expansion and benefits of social media use in recruitment, but several gaps remain uncovered by academic research, and more empirical research is needed to demonstrate the potency of social recruiting. The aim of this work-in-progress is to provide a state-of-the-art synthesis of extant academic research on social recruiting, to support evidence-informed decision-making in the strategic function of recruitment.

1. Introduction and Practical Background

Social media are used in several organizational functions, including human resources management where they achieve several benefits, such as increasing employee engagement (Rai, 2012), strengthening employees' feeling of cultural belonging (Leidner, Koch, & Gonzalez, 2010), and boosting employee pride (Freer, 2012). Social media are also used in recruitment, a practice commonly referred to as 'social recruiting', 'social hiring' or 'social sourcing', and encompassing aspects such as job advertising, applicant screening, and employer branding.

Social media are reported as the second most effective source of hire, after employee referral programs and before corporate career sites (Aberdeen, 2013b), and they are considered a critical component in the recruitment strategy of best-practice organizations, which use them to build relationships, showcase their brand and engage job applicants (Aberdeen, 2013a). In a recent report, Facebook, Twitter and LinkedIn were reported as the top used tools in social recruiting, followed by blogs, YouTube, and Instagram, among others (Jobvite, 2013). LinkedIn, for example, is used by UK-based small businesses in promotion to attract suitable collaborators (Barnes et al., 2012), and is valued by North American recruiters for the significant exposure it gives to job ads compared to Twitter and Facebook (Bullhorn Reach, 2013).

Social media are widely used as a vetting tool both by recruiters' and job seekers. To vet candidates prior to a job interview, 92 percent of recruiters use LinkedIn, 31 percent use Facebook, and 18 percent use Twitter (Jobvite, 2013). In this screening procedure, the content that gets negative reactions from recruiters the most includes illegal drugs, sexual postings, and profanity; whereas mentions of volunteering and charitable actions get the most positive reactions from future employers (Jobvite, 2013). Similarly, 4-year college graduates also go to LinkedIn (23 percent), Facebook (19 percent), Google+ (19 percent), Instagram (16 percent) and Twitter (13 percent) to vet a prospective employer's company culture; and check Facebook (24 percent), LinkedIn (23 percent) and Twitter (19 percent) to look up contacts working for prospective employers (Jobvite, 2014).

Although these figures seem to encourage more recruiters to follow suit, and the practice of social recruiting has proved to be both rewarding and challenging in practice, there is need to also review academic studies on this topic to understand its theoretical underpinnings.

2. Research Overview

Academic research on social recruiting is providing critical insights on the relevance, validity and importance of the practice. Social media are appealing to recruiters because they offer a naturalistic setting to passively observe potential hires, and obtain a uniquely unadulterated view of their interests, personality and values that may not be apparent in professional settings such as interviews (Go, Klaassen, & Chamberlain, 2012; Pike, Bateman, & Butler, 2013). Social media may even help firms address legal concerns related to negligent hiring (Slovensky & Ross, 2012).

As academic publications are burgeoning on social recruiting, many thematic topics of discussion arise. A preliminary overview of the literature led to the identification of several major themes: the use of social media in the selection process to screen applicants; legal concerns surrounding the use of social media in applicant screening; the accuracy of an applicant's social activity and content in predicting their personality; and social media use in employer branding.

An emerging theme of research on social recruiting is the use of social media in the selection process. On the one hand, many recruiters share the view that information voluntarily published online is fair game for judgments on character, attitudes, and professionalism (Cain, Scott, & Smith, 2010). On the other hand, students are mostly unaware of the possibility of having their social networking profiles viewed by recruiters, and of the possible implications of their online activity on their selection (Go et al., 2012; Vicknair, Elkersh, Yancey, & Budden, 2010).

On the legal front, the use of social media in screening and selection presents several advantages and disadvantages. Using social media may prevent negligent hiring (Slovensky & Ross, 2012), but it may also raise issues of fairness, discrimination and privacy (Elefant, 2011; Cavico, Mujtaba, Muffler, & Samuel, 2013; Slovensky & Ross, 2012).

While recruiters believe that the image portrayed by an applicant online reflects who they are on the job (Go et al., 2012), academics remain skeptical. Empirical studies have started to link between personality traits and social postings; for example, extraverted individuals are prone to postings related to alcohol and drugs (Stoughton, Thompson, & Meade, 2013), and those low on conscientiousness and emotional stability are more likely to post inappropriate content on Facebook (Karl, Peluchette, & Schlaegel, 2010). However, research is still needed to investigate the link between an applicant's behavior on social media and their performance on the job.

Interestingly, the repercussions of screening applicants using social media go both ways, and can also affect employers. In a study investigating students' reactions to the use of social networking sites in the selection process, the findings showed that an employer who uses social networking sites in selection was perceived as less fair and had lower job pursuit intentions compared to an organization that refrains from this practice (Madera, 2012). There are other ways in which social media use can affect employer perceptions among job applicants, but in a positive way. For example, social media can be used in employer branding campaigns to build a good reputation, which in turn is positively linked to applicant intentions to apply for a job (Sivertzen, Nilsen, & Olafsen, 2013). Additionally, millennials perceive a higher person-organization fit for a company with organizational policies supporting employees' social media use (Cho, Park, & Ordonez, 2013).

3. Conclusion and Proposed Approach

While practitioner reports largely agree on the wide adoption and increasing success of social recruiting, academic studies provide no conclusive evidence on the practice as a whole. Therefore, there is need for more academic research to support evidence-informed decision-making in the strategic function of selection and recruitment.

Social recruiting can be substantially improved by incorporating insights from academic research and theory. For this purpose, there is need to synthesize academic studies on social recruiting. While conceptual and exploratory papers are a crucial first step towards understanding the emerging practice of social recruiting, a thematic review of extant empirical studies holds the promise of providing greater insight to practitioners.

To satisfy the requirements of transparency and bias reduction in synthesizing research, the authors will follow-up this short paper by identifying, filtering and analyzing studies germane to social recruiting in a systematic fashion. The contributions of this review will consist of a descriptive synthesis of the results of all identified empirical studies, and a thematic analysis of the key areas of academic investigation in social recruiting research. Ensuing efforts will present both a summary of managerial implications to social recruiters, and future research venues for academics.

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Social Media Guidelines and Policies: an Exploratory Study

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Abstract: Social media are increasingly gaining ground in organizations, where they can be used by employees either for personal purposes, or in a professional capacity for internal functions or externally-facing functions. These multiple facets of social media usage in corporate settings can give rise to a number of issues in case of misuse, as often reported by the media. As a preventive measure, organizations can establish social media policies or guidelines to help instill sound social media practices by employees. An initial literature review concludes that research on social media policies and guidelines is scarce compared to the abundant media coverage of the topic, which motivates the need for further investigation. Several venues for future research are suggested.

Keywords: Social media policies; social media guidelines; social media; workplace policies

1. Social Media in Organizations: A Double-Edged Sword

New information and communication technologies have significantly evolved in recent years. Consequently, organizational settings have witnessed the increasing use of social media, which are internet-based applications that allow the creation and exchange of user-generated content (Kaplan & Haenlein 2010), and facilitate collaboration and communication.

A growing body of literature is investigating the use of social media by organizations for several purposes. A distinction can be made between the use of these technologies in internal functions, and their use in externally-facing functions. Examples of social media usage in internal organizational functions include the use of wikis for knowledge exploitation (Hasan & Pfaff 2012), the use of internal social networking applications for employee communication (DiMicco et al. 2008), and the use of virtual world applications for informal learning and employee mentoring (Hamilton et al. 2010). Examples of the use of social media in externally-facing functions include the use of Twitter in marketing (Thoring 2011) and public relations (Sweetser & Kelleher 2011); and the use of social networking sites in personnel selection (Slovensky & Ross 2012). This duality of usage is referred to by Bughin and Chui (2010) as internally networked and externally networked organizations.

Besides this internal-external duality, there is also a professional-personal duality, as social media blur the line between the personal and professional lives of employees (Schalow et al. 2013). Moreover, there is also a distinction between on-duty and off-duty usage of social media by employees, which can impact organizations.

Within these multiple dimensions, organizations can be harmed by the misuse of social media by employees. This misuse can be manifested in different ways, namely negative comments posted online while off-duty, online harassment and bullying of other employees, cyber-slacking, reputational damage caused by online comments, and the publication of confidential information online (Field & Chelliah 2012). While the challenges created by social media for organizations result from the reach, speed and permanency of actions conducted on these websites (Jacobson & Tufts 2012); these risks be mitigated through the adoption of social media policies and guidelines. In the subsequent sections, a brief literature review on employee social media policies is presented, followed by suggestions for future research.

2. Social Media Policies and Guidelines: a Brief Literature Review

As of March 6th, 2014, a search for articles with the keywords "social media policies" in the title returned only two results in the Web of Science database and 55 results in Google Scholar; whereas Google returns

2,940,000 results. This shows the abundance of media and practitioner coverage for social media policies, compared to academic research.

The limited extant research on social media policies seems to focus on three main points: format, content and legal aspects specific to the United States. Firstly, in terms of format, the documents dealing with the use of social media by employees can be: (a) separate social media policies, (b) social media guidelines, or (c) social media policies included within a larger policy, which is often an IT usage policy (Jacobson & Tufts 2012). Policies are defined as official positions on the use of social media by employees, while guidelines are defined as advice on the best ways to use these tools (Hrdinová et al. 2010).

Secondly, in terms of content, social media policies can address both on-duty and off-duty conduct of employees on social media (Jacobson & Tufts 2012). On the one hand, the main components of social media policies regarding on-duty conduct on social media are the protection of confidential information; authority, i.e. who can speak on behalf of the organization on social media; and disclaimers identifying oneself and whether the person is communicating in a personal or professional capacity (Jacobson & Tufts 2012). On the other hand, social media policies contain less clear stances on off-duty conduct of employees on social media, with general recommendations that employees put forward online disclaimers to distinguish between their personal and professional views (Jacobson & Tufts 2012).

Thirdly, a distinct, although modest, stream of research examines the legal and regulatory issues implicated by the use of social media, and their impact on social media policies in private and public sector workplaces in the USA (Berkowitz et al. 2012; Brice et al. 2012; Cavico et al. 2013; Elefant 2011; Kaupins & Park 2011; Neal 2012). In this context, the American National Labor Relations Board published a special report in 2012 discussing several cases of social media policies, and showing examples of unlawful policies under the National Labor Relations Act (see National Labor Relations Board, 2012).

Despite the acknowledged importance of social media, many organizations are still trying to determine how and whether they will address issues related to their usage within corporate policies (Jacobson & Tufts 2012). Therefore, there is need for further academic research to provide organizations with recommendations.

3. Expected Methodology and Future Research Venues

Given the limited body of literature on social media policies and guidelines, a number of research questions are open for investigation. There is need, for example, to investigate the factors that are behind the adoption, or lack thereof, of social media policies or guidelines, especially in Europe where there is a shortage of new legal principles guiding social media usage by employees, but where traditional laws still apply (Kaupins & Park 2011). There is also need to investigate the issues surrounding the implementation, or lack thereof, of social media policies, after their adoption.

For first investigation efforts, exploratory research methods are suitable, because they help gain familiarity with a new phenomenon (Kothari 2004), and find key themes from an empirical perspective (Brewerton & Millward 2001). Accordingly, our initial exploratory efforts aim to guide future empirical research on social media policies and guidelines, and help organizations have a clearer idea of practices in the fields of managing social media usage by employees in the workplace. Data will be collected either through interviews or online questionnaires, from information technologies' managers in Belgium, as social media policies are found to be mostly created by departments in charge of information technologies (Jacobson & Tufts 2012).

Other possible research venues include studying what types of social media policies are most commonly used in practice (Kaupins & Park 2011), examining the outcomes of social media policies (Jacobson & Tufts 2012); analyzing social media policies from various non-English speaking countries to study cross-cultural differences (Vaast & Kaganer 2013); examining the impact of different types of social media policies on employee engagement, productivity and retention, and on workplace climate; and conducting longitudinal studies to investigate the relationship between social media policies and organizational attractiveness (Cho et al. 2013).

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Towards a Social Data Enriched Search Algorithm for Business Intelligence Portals

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Abstract: Today's knowledge workers are confronted with a vast amount of data. Information overload foils them from finding relevant information. This especially is a problem in Business Intelligence (BI) portals where data sources differ, data is multi-structured and many reports may look similar despite providing different insights. Therefore, most BI portals offer their users simple search functionalities based on algorithms that solely take into account a report's metadata to calculate the extent to which it matches a user's search query. However, the ongoing integration of Web 2.0 features in corporate software is leading to a pool of social data that can enrich this calculation. More precisely, incorporating personal data about the user entering the search query (such as age or hierarchical position) can help matching search results and individual information needs. In addition, data about other users' interaction with available reports (e. g., usage histories) can be considered for ranking search results and may improve search quality.The potential of integrating social data has long been recognized due to the implementation of web search algorithms. We argue, however, that these algorithms should not simply be transferred to BI portals since they do not consider the specificities of the data available in this context. Therefore, there is a research gap between the users' need for social search functionalities and existing BI software.In this research-in-progress, we address this gap and take a first step towards designing an algorithm optimized for a social BI search. More precisely, we identify the data variables available in common BI portals, classify each variable by whether it is report-related, user-related or interaction-related and argue how we expect it to influence the relevance of a report to a user. This classification serves as the basis to develop a search algorithm for the use on BI portals as the next logical step.

Keywords: Business Intelligence, search algorithm, knowledge management, social data, search engine

1. Introduction and background

The vendors of Business Intelligence (BI) software face new challenges triggered by current technical and organisational BI trends: For example, big data and social media analytics are two dominant technical trends that cause requirements which go beyond the potentials of traditional systems on the intranet. Additionally, the lifting of access restrictions as an organisational trend leads to an increasing number of BI users with low analytical skills. As a consequence of both trend types, users as well as vendors are confronted with a growing amount of data and reports within enterprises. Existing BI portal solutions do not match the demands regarding an efficient information search in this new intranet environment (Böhringer et al. 2009).

An intranet search solution aims to find all knowledge assets within the corporate intranet that relate to a user's search query. Intuitive and efficient approaches to search a large amount of data are known from the internet (e.g., google.com). Furthermore, web-search-like graphical user interfaces require no additional training effort for knowledge workers (Evelson 2012). However, we argue that a simple porting of web search algorithms leads to an insufficient quality of search results on the intranet due to the following specificities:

- often only one correct result,

- more detailed social data available,

- identification of users across system boundaries,

- well structured objects,

- higher risks when adopting information,

- no search engine optimization,

- lower variety of search inputs,

- lower amount of "junk" data,

- no links to rank results.

Although intranet search engines are embedded in an environment of lower complexity, their quality is perceived to be lower than the quality of their internet counterparts (McAfee 2006). The importance of a useful search engine on the intranet can be seen by the fact that three out of six constituting technology characteristics of Web 2.0 technologies in enterprises (search, links, and tags) can directly be linked to search (McAfee 2006). However, links are often not available and, therefore, other cues have to be taken into account (Chaudhuri, Dayal & Narasayya 2011). One possible cue can be the integration of social data, a strategy that has been proven to be successful in a web search context (e.g., Google integrated data from its social network Google+ into its search functionality in an upgrade called "Search plus Your World", (Singhal 2012)). Indeed, there have been approaches to integrate data from social media into intranet search (e. g., Ronen et al. 2009). Contrarily, little work has been done to enrich BI search with social data. BI search basically works similar to intranet search, but its scope is usually restricted to reports created within a BI platform. Thereby, it can exploit the (meta)data specific to this asset type (e.g., the usage of filters) and the social data related to them (e.g., how many users have searched for reports containing a certain filter). Since the contribution of social data is voluntary, we do not expect any data privacy concerns.

In section 2 of this paper, we identify variables whose consideration for BI search can improve the ranking of search results. In section 3, we conclude our work and discuss how we intend to proceed.

2. Variables

According to Inmon, O'Neil and Fryman (2008) the variables taken into account to assess a report's relevance can be distinguished in variables that are common in all document types (e.g., creation date) and variables that can be used to classify a document (e.g., tags, keywords, etc.). Both variable types are substantial parts of a report but not of a user. Thus, when incorporating social data into BI search, this dichotomy becomes insufficient. Therefore, we suggest a categorisation of search relevant variables into the following categories:

- *Report-related variables*: data of the report and metadata describing its content.

- *User-related variables*: accessible information about the user itself drawn from the roles and functions management and the user's report usage history and search history.

- *Interaction-related variables*: information attributed to a report by its users and the observed data of other users' interaction with the report.

As mentioned before, the traditionally most important variables when estimating the relevance of a report to the querying user are those who describe the report's content. They primarily comprise the report's title, its (short) description, some tags, its structure (i.e., filters, rows, columns, etc.) and the concrete data it is based on. Typically, except the latter, all of these variables were set by the author of the report at creation time. However, after the integration of social data in our analysis, we are also able to observe with which queries the other users who have seen the report have searched, constituting a form of social annotations. Furthermore, the report might have been commented, rated or tagged by those users. This additional information can also be searched through (Dmitriev et al. 2006). All those descriptive variables can be considered in a similar way: The degree to which they match a user's search query determines the report's estimated relevance to the information seeking user.

The second major source of information we can exploit when integrating social data are the relationships between users (Carmel et al. 2009). For this purpose, we observe for each user his role in the system and in the organization. Since we are aware of the organisational structure that is reflected by the roles and functions management integrated in the BI system, we can evaluate the relations between these positions in hierarchies. For example, if we know that a report has been relevant to a colleague of the querying user (i.e., to a user on the same hierarchical level), this knowledge increases the probability that the report will also be relevant to this user itself.

Of course, a report's relevance to other users is not known ex ante. However, it can be inferred by the observable behaviour of these users: Their search histories tell us in which topics they have been interested; then, factoring in the usage statistics of each report, we can guess whether they have found what they have looked for (indicating a high relevance of the report) or not (indicating a lower relevance). Furthermore, other users might have rated, commented, shared or updated the report, which information also can be used to estimate its relevance to them.

The relationships between users themselves can be moderated by many observable variables. If we know how often the querying user interacts with other users (defining his "network"), we can use this information to weight the corresponding relationships accordingly. A set of further variables that can be exploited for this purpose are the querying user's personal characteristics in relation to the report's features. If, for example, the report is presented in a language that the querying user does not understand, it can be assumed to be of low relevance to him, despite having been relevant to a colleague who is able to speak this language.

Finally, there are some variables which influence the meaning of other variables. For example, a report's creation date should be considered as a way to normalize its usage statistics in order to allow a fair comparison with other reports of a different age.

In Figure 1, we provide an overview over the most important variables that can be taken into account in at least one of the ways described above. Each variable is classified according to whether it is report-, user- or interaction-related. In addition, we distinguish for each variable whether it influences a report's objective (to all users) or subjective (to the querying user) relevance, constituting a further dichotomy.
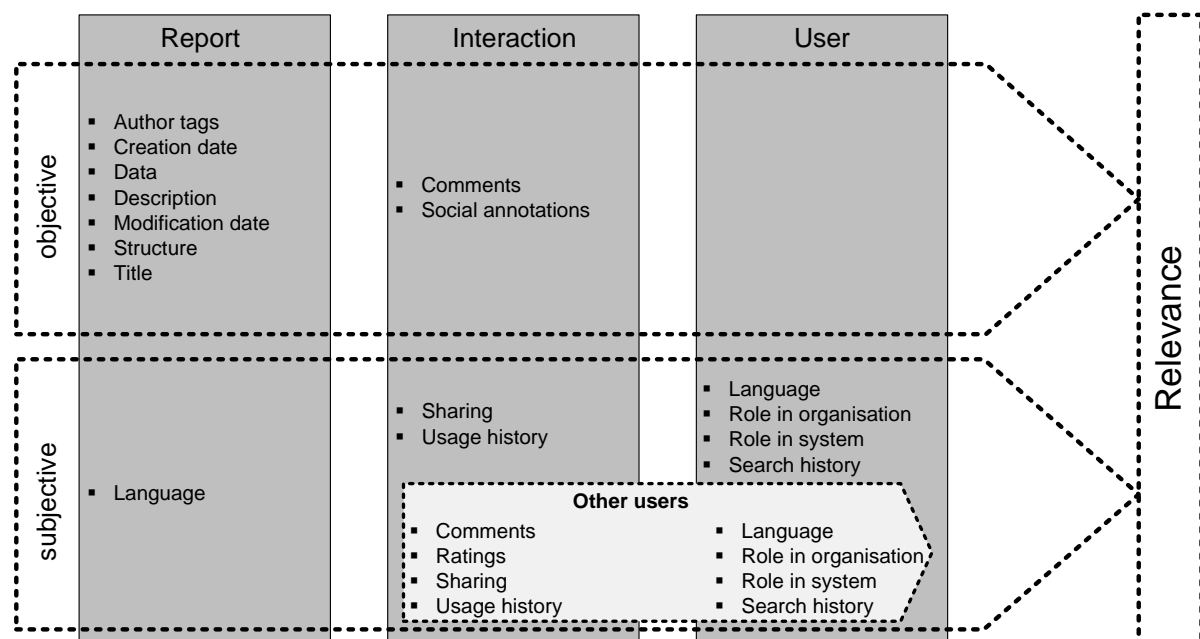

Figure 1: Classification of variables for BI search

3. Conclusion and further research

In this paper, we have identified variables that have to be considered when developing a search algorithm for BI portals. Furthermore, we have classified them in accordance to their character into report-related, user-related and interaction-related variables and distinguished whether they influence a report's relevance objectively or subjectively.

Based on this classification, we aim to develop a search algorithm for BI portals and evaluate it by implementing it in a testing environment following the design science paradigm (see Hevner et al. 2004). The completed research will not only contribute to theory but also have tangible implications for technology-oriented and management-oriented practitioners.

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Building Trust in Government through Social Media: *An InterPARES Trust Research Project*

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Abstract: Globally, trust in government fell 14% since 2013 according to the *2014 Edelman Trust Barometer*. Canada experienced a seven-point drop to 51% and the U.S. a ten-point drop to 49%. At the same time, trust in information provided through new media rose. Online search engines were considered credible sources of information by 63% of respondents and social media by 45%, up from 41% in 2013. The purpose of this research project, *Social Media and Trust in Government*, is to answer two questions, "Is there a positive correlation between trust in government and social media initiatives?" If so, "What can we learn about the administration of social media initiatives that result in an increase of citizen trust in government?" The first phase of the project involves a literature review, a study of selected government social media initiatives in the U.S. and Canada, and a cursory examination of citizen attitudes as evidenced by online interactions. The second phase involves an exploration of the correlation between citizen experience and trust in government, as well as linkages between trust and the concepts of openness, transparency, accountability and social capital. This paper describes the work conducted to date. The authors are members of the North American Team of international researchers contributing to the InterPARES Trust research agenda aimed at producing a framework to ensure trust in digital records in a networked society.

Keywords: trust, e-government, e-participation, social media, social capital, InterPARES Trust

1. Introduction

Government experienced the largest decline in trust of any institution in 2013, according to the 2014 Edelman Trust Barometer. The online survey of 33,000 respondents in 27 countries revealed that globally trust in government fell four points to an historic low of 44 percent. The most significant drops were in the U.S., France, and Hong Kong, moving levels of trust in those countries below 50 percent.

The same study revealed that global trust across all media declined only slightly. However, in countries like the U.S. and Canada, less than half of the respondents, 42% and 41% respectively, trust media to do what is right. Although trust in the media in general decreased, trust in social media and information shared online has increased. This prompts the question, "Can social media be used by government to increase citizen trust?"

2. Literature Review

Understanding elements of trust as they relate to social capital is a significant challenge for government. Meeting this challenge requires an e-governance strategy that includes citizen e-participation. According to Watson and Mundy, when citizens learn "how and why a particular political decision is forming, citizens will be more capable of monitoring and influencing politicians" (2001:29).

Electronic Government (e-GOV), the application of the Internet and other Information Technology (IT) to provide information and services to citizens electronically, emerged in the late 1990's (Grounlund and Horan 2005). Chen et al. (2006) define e-government as a "permanent commitment" by the government to provide electronic services to constituents.

Chun et al. (2010) place the development of e-government into four categories. During the first three, basic information is provided on government websites, interactivity is added to webpages, and transaction services are provided. The fourth category is a participatory/co-productive one where government promotes shared governance to transform operations in terms of seamless information flow and collaborative decision-making (p. 1).

Using a two-stage model to analyze 2001 Pew survey data, Tolbert and Mossberger (2006) concluded that something as simple as "visiting a local government website led to enhanced trust in local government." But Kolsaker and Lee-Kelley (2008) studied citizen participation in e-government through the lens of e-governance and concluded that e-governance is not fully functional until e-participation takes place. D'Agostino et al.

(2011) make a key distinction between e-government and e-governance, where e-government provides electronic services and access and e-governance fosters e-participation and civic engagement. If e-participation represents the actions citizens take to electronically engage with their governments, co-production (i.e., value created by one outside the agency prompted by the agency) is a positive outcome (Alford 2011:7).

Because e-participation goes beyond transactional relationships, understanding how governments may employ social media to facilitate e-participation is crucial to understanding the complex nature of the e-citizen/e-government relationship. In a cyclical manner, social media content has the potential to affect policymaking decisions that strengthen e-government initiatives, which in turn may lead to greater transparency and openness (see Figure 1). The genesis for providing effective e-governance lies first with creating more effective e-government models and then with facilitating more robust e-participation that advances e-governance.
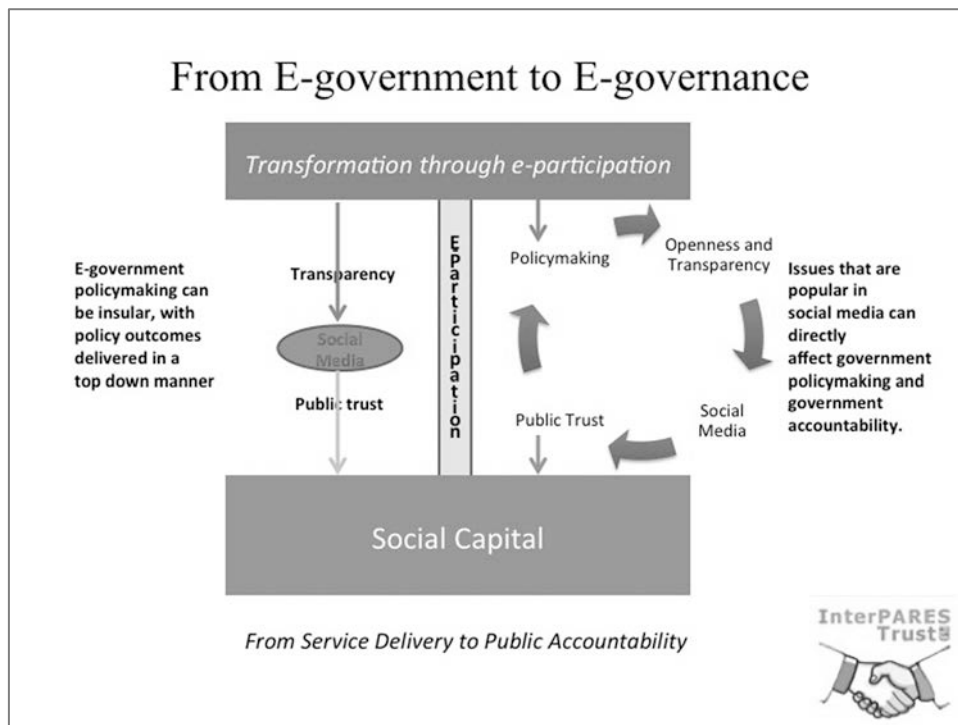
Figure 1: E-participation transforms E-government models into E-governance models.

Recently, researchers have recognized the relatively unexplored area of study related to the use of social media by government and its correlation to citizen trust. However, early empirical studies relied on 2001 Pew research survey data (Tolbert and Mossberger 2006; Welch et al. 2005; West 2004). A more recent study by Song and Lee (2013) used 2009 national e-government survey data from the Pew Research Center. This study will explore the relationship between government use of social media and citizen trust by gathering and analyzing primary data. From the data gathered, case studies will be written and best practices will be identified to assist public administrators improve their social media strategies with the goal of increasing citizen trust and social capital.

3. Theoretical Foundation

The theoretical foundation is based upon archival and diplomatic theory and concepts related to trusted records and incorporates the following theories:

- Behavioural Trust Theory, which defines trust relations among people and organizations (related to citizen beliefs and preferences and trust in government).

- Resource-based Theory, which explains how public administrators utilize their resources and capabilities to share information, engage and influence citizens, and foster e-participation through social media strategies.

- Social Capital Theory, which is a broad term encompassing the "norms and networks facilitating collective actions for mutual benefits" (Woolcock, 1998, p. 155).

- Social Network Theory, which views social relationships in terms of nodes and ties (actors and relationships, in this case government and citizens).

4. Research Design

This project is part of the overarching multi-dimensional, international, collaborative research agenda called "Trust and Digital Records in an Increasingly Networked Society (InterPARES Trust)" that began in April 2013. The four-year study is funded in part by the Social Sciences and Humanities Research Council of Canada. It aims to produce frameworks that will support the development of integrated and consistent local, national, and international networks of policies, regulations, standards, and legislation concerning digital records entrusted to the Internet, to ensure public trust grounded on evidence of good governance.

The multi-faceted research design for this project combines both qualitative and quantitative methods, including exploratory research, correlational research, and case study design. The methods of data collection and analysis include observations conducted online, sentiment analysis of social media content, semi-structured interviews, and surveys to determine if there is a correlation between citizen trust and government use of social media.

4.1 Phase 1

This first phase is exploratory in nature. An iterative approach was used to develop the research design and to select subjects. During phase one:

- Ten cities from the US and ten from CA were selected from information available online to ensure geographic and demographic diversity while meeting the minimum requirement for social media accounts (i.e., Twitter accounts for the city, mayor, and police).

- Three years of content will be gathered from three city-sponsored government Twitter accounts for each municipality (city, major, and police). Sentiment analysis tools (e.g., Splunk, Weka, Netlytic) will be applied to identify citizens' attitudes when interacting within government social media accounts.

4.2 Phase 2

The second phase involves both correlational research and case study development. During phase two:

- Online surveys will be administered to gauge citizen levels of trust in government and in information received through social media. A partial least squares (PLS) analysis will determine if a correlation exists. Linkages between trust and the concepts of openness, transparency, accountability, and social capital will be explored. The survey will be based on the Edelman Trust survey, and the levels of trust exhibited by citizens in each city will be compared with 2013 national averages for the U.S. and Canada.

- Additional data regarding administrative issues (e.g., expectations, metrics, outcomes) will be gathered either in person or through telephone calls or web conferences with government employees. Case studies will be developed for the four cities with the highest levels of trust exhibited as a result of the online surveys. Best practices for public administrators will be identified. Results will be disseminated through the InterPARES Trust website (Interparestrust.com), conference presentations, and publications.

5. Conclusion

Citizen trust in government is at an all time low globally and has fallen in both the US and Canada. At the same time, trust in social media as a credible source of information has maintained an upward trajectory. We posit that social media can be an effective tool to engender citizen trust in government and increase social capital. The purpose of this study is, first, to prove or disprove this hypothesis and second, to develop case studies and best practices to share with public administrators. Linkages between trust and openness, transparency, accountability and social capital will be explored.

Similar studies related to citizen trust and government use of social media analyzed existing datasets from 2000 or 2009. This study will examine primary data gathered from selected municipal government websites, government employees, and citizens. Questions to gauge citizen trust will be based on an existing tool, the

Edelman Trust Barometer, which has measured global levels of trust for the past 14 years. The results will be shared through the InterPARES Trust website, publications, and conference presentations. This research design can be replicated for additional municipal governments as well as government agencies on the regional level in the U.S. and Canada. It can be adapted to explore levels of trust in government and trust in information acquired from government social media sites for cities around the globe.

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Understanding the Implications of the Use of Information Communication Technology (ICT) and Web Based Learning Environments in University Learning and Teaching

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Abstract: During the past decade there has been an exponential growth in the use of information and communication technology (ICT) by higher educational institutions. Most of the higher educational establishments have recognised the importance of ICT and have adopted various ways to integrate technology in their teaching methods. Until recently the learner-teacher interaction was considered unimaginable without direct contact but the evolution in the field of ICT has led to the integration and adoption of Virtual learning environments (VLEs) and E-learning systems which provide learners the opportunity to learn at their own pace from wherever they are based. This approach to teaching involving the use of technology to supplement class room teaching has been referred to by many authors as *Blended Learning.* From a Higher education establishment's standpoint, it is important to understand this impact from a broader perspective by taking into account not only the perception of the students, but also taking into account the perceptions of the academic staff involved with the use of such technologies. Whilst research has been done to understand the implications of ICT and Web based learning environments, there has been very less research done to understand these implications from an empirical perspective. Apart from this, there has been very few research to understand these implications from a psychological perspective such as examining the behaviour of users while adopting newer technological platforms. The researcher aims to address all these important factors, specifically the Status Quo Bias (SQB) which sets in when users resist the implementation of a new system and continue using the incumbent system in order to maintain cognitive consistency. There has been very less research done to understand such *"Habits"* of users in the Information System (IS) domain. The current research would be a novel research in the sense that it will take into account several different perspectives such as social, technical and psychological perspectives whilst implementing newer technological platforms. The findings from the current research would also be beneficial for IT consulting firms which implement newer IT platforms on a regular basis and face problems with regards to their technological implementation and subsequent user acceptance. The current research incorporates the Technology Acceptance Model (TAM) framework and conceptual model which is basically advancement and an extension of the TAM model to successfully achieve the desired research outcomes.

Keywords: Information Communication Technology (ICT), Virtual learning environments (VLE), Technology Acceptance Model (TAM), Status Quo Bias (SQB), Habits, Information Systems (IS)

1. Overview of the Research

1.1 Introduction

According to Ituma (2011), learning and teaching practices in higher education have undergone a lot of changes over the last few years which has had important implications for the nature of students learning experience. This view is supported by Howland & Moore (2002) who are of the opinion that due to the advancements in the field of ICT, integration of technology in education is taking place on a large scale. Another research carried out by Tsvetozar et al (2004) points out to the fact that due to these advancements in the field of ICT, different modes of teaching and learning have been developed, which include teaching and learning in the form of online, distance and network learning environments. Many researchers (Selwyn, 2007; Draper & Brown, 2004; Oliver, 2006) act as proponents of integrating technology in education and are of the opinion that ICT and the use of VLEs and E-learning systems by academic faculties in class would accelerate student learning and support interactivity, interaction and collaboration.

1.2 Research Rationale

Most of the higher educational establishments have adopted the use of VLE and ICT in their curriculum. According to Jones & Knezek (1993, p.702), integration of ICT in education has acted as a "major vehicle to improve efficiency". This is supported by Bates (2000, p.7) who state that "ICT, if used properly will change the way a university or college does its core activities". Hence, it is imperative that research should be done to understand effective IT implementation in university learning and teaching.

Another important area that the researcher wishes to investigate is the resistance that is offered by users whilst adopting a new system and continued persistence to use an incumbent system despite knowing the advantages that the new system or technology can offer (Polites & Karahanna, 2012).

Polites & Karahanna (2012) have put forward the following factors which might act as inhibitors to the acceptance of a new system or technology. These are as follows:

1.) Incumbent system habit i.e. Habitual behavior of user towards using an existing system.
2.) Switching costs involved while migrating from an old system to a newer one.
3.) Inertia or resistance on new system acceptance.

1.3 Research Questions

After surveying much of the literature available, the following research questions have been put forward:

RQ1: What is the student's and staff's frequency of usage of a typical E-learning system/VLE?

RQ2: What is the perception of students and staff with regards to learning and teaching using different components of a typical E-learning platform such as Blackboard?

RQ3: To what extent, in what ways, and for what purposes are ICT and VLE being used in higher educational establishments?

RQ4: To what extent are the students and staff satisfied with regards to incorporation of computer technology in university learning and teaching?

RQ5: What are the implications, potentials and challenges that higher educational establishments are currently facing when it comes to technology integration in learning and teaching practices?

RQ6: What are the different habits that users exhibit whilst using incumbent systems and how can the inertia or resistance to the adoption to a new technological system be overcome?

There are two models that would be used to carry this research forward which are described as follows:

2. Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the most widely accepted models that is used to evaluate the understanding of an Information system by a user (Walker & Johnson, 2008). According to Chuttur (2009, p.2), many models have been proposed to explain and understand the behaviour and acceptance of a user in a virtual environment, but the most widely accepted model is TAM.
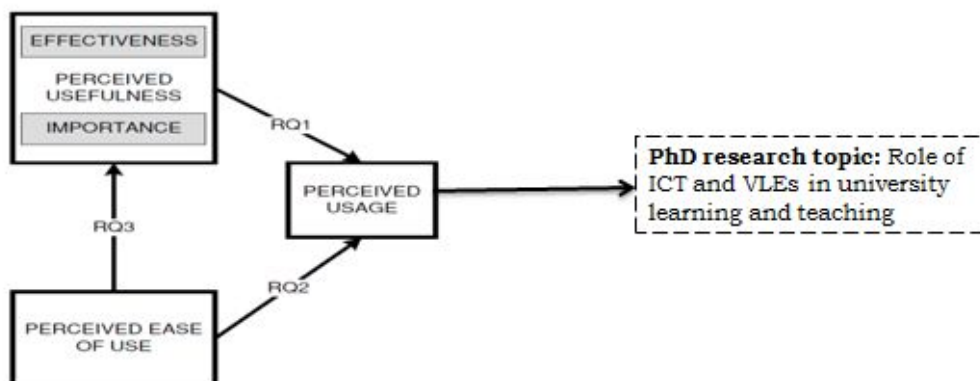
Figure 1: Technology Acceptance Model (Adopted from Landry et al (2006)) depicting the relationship between the research questions and determinants of TAM.

2.1 Factors Affecting Technology Acceptance

Following up from the TAM framework described in the previous section, this section mainly deals with the study of "Habits" of users whilst using technology. Many researchers (Gibson, 2003; Lapointe & Rivard, 2005) are of the opinion that user resistance to adopting and using new information system is the main concern among researchers and practioners that has to be overcome in order to facilitate successful technology implementation.To further understand this ideology, Polites & Karahanna (2012) proposed the conceptual model.

Before moving on, it becomes imperative to define a concept referred to as Status Quo Bias (SQB).

2.2 Status Quo Bias

Samuelson & Zeckhauser (1988) first demonstrated and explained SQB, which was a major breakthrough in understanding the habits of users during IS implementation. The SQB perspective suggests that individual decision makers responsible for deciding IS implementation procedures might stick with maintaining status quo through mechanisms such as rational decision making based on perceived costs involved in migration from an incumbent to a new system and/or consider psychological commitment on the part of the incumbent system user to maintain cognitive consistency

2.3 Conceptual Model: An extension of TAM

Polites & Karahanna (2012) have put forth the conceptual model which takes into account the two variables of the TAM framework namely Perceived usefulness (PU) and Perceived ease of use (PEOU) and incorporate several different variables in order to understand and elaborate on the perception of users and their behaviour before and after the IS implementation procedure. The model is diagrammatically represented as follows:
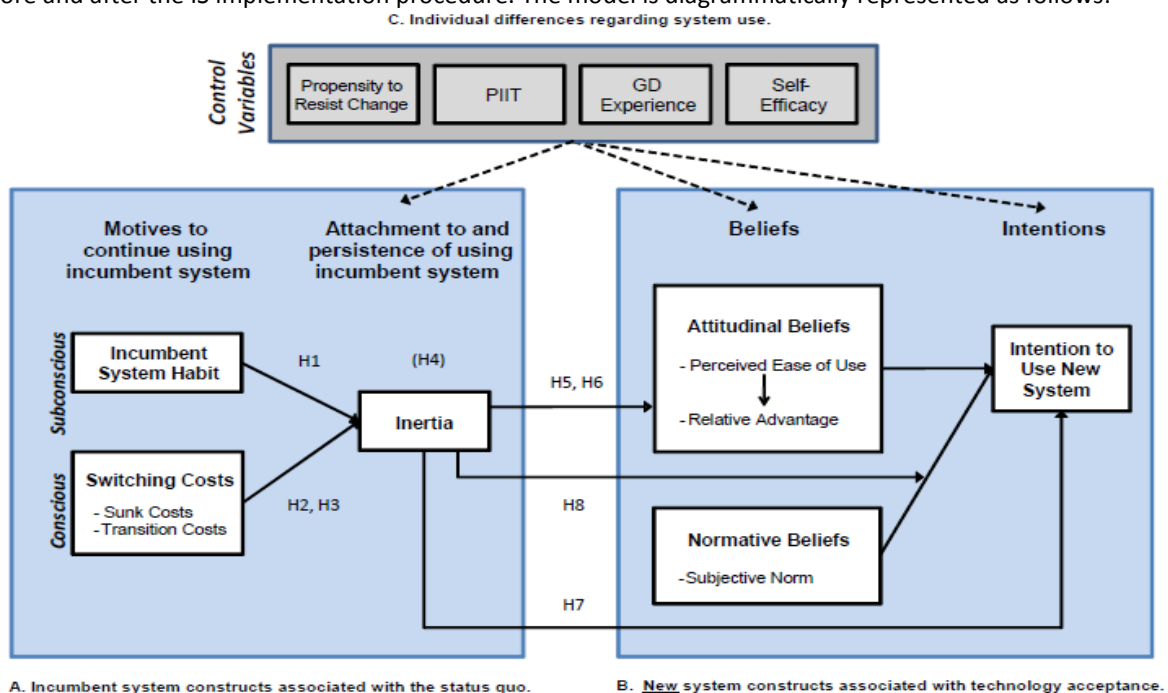
Figure 2: Diagrammatic representation of Conceptual Model (Polites & Karahanna, 2012).

The diagram represents a multiperspective model which takes into account the conceptual model, which is a multi perspective model taking into account several different parameters to monitor user habits and behaviour. According to Polites & Karahanna (2012), this model contains additional parameters such as Subjective Norm (SN) and Relative Advantage (RA), both of which help in determining various aspects of how users behave in a technological environment. Thus, the conceptual model would help in determining relationships between three different parameters namely PEOU, RA and SN. It is envisaged that such a determination would help the researcher in investigating how should ICT and VLEs be effectively implemented in higher education teaching and learning practices. Through the current research, we aim to use both the

TAM and the conceptual model and compare and contrast the results obtained through the use of both these methods.

3. Methodology:

Fink (2002), backed by Maree (2010) are of the opinion that a survey is well suited for descriptive studies. This view is supported by Creswell (2009) who is of the opinion that a survey approach is useful when the researcher has to look at relationships between variables which occur in real time. In the context of the present study, the researcher has to understand relationships between students perception and various other variables such as ICT skills, age, gender and programme of study.

4. Conclusion

The current research is aimed to bring empirical, theoretical and practical insights towards understanding the implications of ICT and Web based learning in University learning and teaching. It is envisaged that the findings of the current study would have practical value for students and academic staff who often use ICT and E-learning systems in regular learning and teaching practices.

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LinkedIn as Part of the Daily Work of Professionals

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Abstract: The paper addresses the professional use of LinkedIn with particular interest in the innovative potential of this social network. The results of the pilot study among LinkedIn users show that professionals use LinkedIn for various work related purposes, including, not surprisingly, recruiting, but also keeping track of trends in their industry and following other experts. Although direct impacts on organisational innovation resulting from the use of LinkedIn could not be identified, gaining information and learning about the experiences of others can be regarded as useful for fostering innovation. Information sharing behaviour and expanding one's network by following interesting people may also increase the potential for innovation. The present study provides valuable guidance for a more structured survey that we are planning to conduct in the future. The results of the pilot study may also help organisations and individuals to consider effective ways of utilising LinkedIn in their everyday work.

Keywords: social media, LinkedIn, professional use, business impact, innovation, survey

1. Introduction

The use of social media, such as Facebook, Twitter or LinkedIn has become an integral part of the life of particularly the younger generations. The number of Facebook users has exceeded one billion in 2012 (Yahoo! News, 2013) and in the professional LinkedIn network there were more than 277 million members in 2013 (LinkedIn, 2014). Organisations have also become interested in social media and are establishing their presence there. In 2013, more than 3 million companies had LinkedIn Company Pages (LinkedIn, 2014). Furthermore, from the perspective of professional work, social networks may be valuable for searching for new ideas or finding out technical information for organisational innovations.

Social networks may be valuable for innovation, but it depends on how people behave strategically within the networks. Basically, two kinds of strategic orientations towards behaviour in social networks can be identified: the so called *tertius iungens* and *tertius gaudens* orientations (Obstfeld, 2005; Baker and Obsfteld, 1999). The *tertius iungens* orientation is about "connecting people in their social network by either introducing disconnected individuals or facilitating new coordination between connected individuals" while the *tertius gaudens* orientation emphasises the "structural holes theory, which concerns the advantage of a broker who can play people off against one another for his or her own benefit" (Obstfeld, 2005, p. 100). The study by Obstfeld (2005) showed "that a tertius iungens orientation, dense social networks, and diverse social knowledge predict involvement in innovation" (p. 100).

In this research, we investigate the professional use of the LinkedIn network, with a special interest in its innovative potential. As social networks are becoming more and more embedded in everyday life, we aim to find out how business professionals use LinkedIn as part of their daily work. The main objective of our research is to explore this new phenomenon and to document different ways of utilising LinkedIn within business. Our results from a pilot survey among LinkedIn users provide preliminary evidence of the innovative potential of the LinkedIn network and open up interesting avenues for future research on the use of LinkedIn in business.

The pilot survey conducted is described in the next section. The results are discussed in section three and the paper is concluded in section four.

2. Methodology

The present research is a pilot study for a future research on the motivations of professional LinkedIn use. Because of the novelty of the phenomenon and the lack of theoretical frameworks that could be directly applied to formulate survey constructs, we gathered data through an online questionnaire containing mostly open-ended questions. The aim was to receive rich descriptions on LinkedIn use and views on its impact. The

descriptions would help us to formulate questions and to find relevant theoretical frameworks for a more structured survey in the next phase of the research.

The survey was conducted in December 2013 by using the Webropol 2.0 online survey and analysis software. The respondents were selected from LinkedIn groups related to social media, analytics, or business intelligence. These networks were chosen for our research because of the great practical relevance of the topics and high activity within the networks. One of the researchers selected the respondents among his wide LinkedIn network with a view to choose the respondents based on their activity and expertise. Altogether 60 experts received the public link to the Webropol questionnaire as a LinkedIn message.

After two reminders to all the 60 respondents, altogether 12 usable responses were received. Most questions were open-ended and they were analysed qualitatively to identify and categorise LinkedIn use and impact. Due to the small number of responses, no quantitative analysis could be done.

The questionnaire started with four warm-up questions about the demographics of the respondents. The respondents were mainly North-European (9) managers (8) and professionals (4). They had worked in their current job mostly for 2-5 years (7) and they represented many industries (e.g. wholesale and retail (3), finance and insurance (2), education (2), and other services (2)).

The survey then continued with eighteen questions about LinkedIn network, use and impact. These results will be discussed in the next section.

3. Survey findings and discussion

The majority of the respondents used LinkedIn daily (9), had joined LinkedIn years ago (> 8 years (5), 4-5 years (4)), and their networks were wide (100-500 contacts (5), 501-1,000 (4), > 1,000 (2)). Colleagues or friends had recommended LinkedIn as a good network "for following what is happening in interesting areas and to stay in touch with people". "First it was for fun, later a good way to maintain contact information. And even more later good way to get in contact with new possible employers." When choosing the members of one's network, all respondents emphasised the importance of knowing the prospect, preferably in person in work context. "People I've been working with, colleagues, consultants and friends. I'm not an open networker." "Based on the industry they work in as well as our mutual connections" Position or role, organisation or geographic location was not important. Most respondents did not want to classify their network members but if they did, the main criterion was activity in posting and their relevance. "Position is not a key, but having a great personality and easy to work with. Whoever can be the key member depending on the situation in life." "Key members are those who produce relevant up to date updates regularly."

All respondents belonged to LinkedIn groups. The total number varied between 2 and 25. However, most groups were just followed and only the most active respondents were participating in the discussions in 2-5 groups at maximum. Two reasons were mentioned: "I haven't seen the group discussion that useful." and "Unfortunately I don't have time to follow all discussions." Endorsing the network members every now and then was common (9). All expect two respondents also shared information, e.g. status updates and news sometimes (6) or frequently (6). In general, the respondents regarded themselves as followers, contributors, or somewhere in the middle, sometimes depending on their needs. "Active contributor and follower at the same time." "Depending on my needs, a little active to quite passive."

The most important purposes of LinkedIn use were keeping track of individuals and industries. In addition to getting and sharing information, career opportunities were seen as essential. "First getting professional contacts, then reading interesting stuff related to my current job, interesting articles." "Info sharing and following what's happening in my industry." "Keeping track of people, job opportunities." Joining LinkedIn was seen as beneficial and it had helped e.g. in recruiting and getting job and business opportunities, as was expected. The information received through LinkedIn was regarded as very valuable for and useful at work and it was often forwarded to others in the network. "Sometimes I find actual articles about trends and that I may consider at my work today." "Many links have become business deals." "It is mostly heads up kind of info, pointing to real source. It is valuable for sensing what is trending." "Share ideas, promote jobs and find updates (positions and connections)."

At the organisational level, the outcomes and impact of LinkedIn was not evident. However, two respondents mentioned LinkedIn as a source of innovations and new ideas. "At some point we used a private group for company internal discussion board for new innovations." "None direct. Network as such is food for thought which might lead to ideas impacting organisation."

All respondents except two had joined years ago also other social media networks. Facebook was most popular (10) followed by Twitter (7), Yammer (5), and Google+ (4), and many others were also mentioned. Information sharing motivated to use other social networks, but the objectives and networks were different. "Information sharing. Each has different role and different networks."

Finally, the respondents regarded the use of social media as rather an individual level tool than useful at the organisational level. "Individuals are utilising info from LinkedIn or not, organisation can have info page or recruitment ads, but nothing else." "Real measured results are small." This finding is surprising as the organisations are constantly struggling with how to utilise social media efficiently.

The results show that LinkedIn is indeed used at everyday work of professionals. Receiving information that is useful at work was the main reason for using LinkedIn. Another common use was recruitment, either seeking for potential employees or looking for a new job. The network was also valuable for seeking experts and following those whom you have met somewhere and found interesting work-wise or recruitment-wise. Thus, LinkedIn works as a kind of an electronic, intelligent business card. Sharing of information or endorsing contacts was not so common. Our results are in line with a survey conducted by Lab42 in 2011 (Lab42, 2011).

Some respondents saw great potential in LinkedIn for peer consulting and support and emphasised the importance of gaining first hand experiences related to specific novel technologies and new ideas for the further development of their work and business. One respondent even mentioned that their organisation had established a closed LinkedIn group for internal ideation, although participation in LinkedIn groups in general was not very active.

4. In conclusion

The results of our pilot study on the professional use of the LinkedIn network and its innovative potential are encouraging, although direct impacts on organisational innovation could not be identified. However, gaining information and experience through the LinkedIn network can be regarded as useful for fostering innovation. In addition, following others in the network is beneficial for expanding the expert network, which in turn might be valuable for innovation.

Our results help organisations and individuals to consider effective ways of utilising LinkedIn in their everyday work. It seems that organisations, despite their activity in LinkedIn, do not support or encourage the activity of their employees in LinkedIn, although the information received from there definitely is valuable for the organisation as well. Arguably, organisations could do more to make use of the full potential of this network of professionals in their business and innovation operations. LinkedIn seems still to be a network of individuals, but there may be potential to increase the work use of LinkedIn. In the future, we aim to conduct a more structured survey for a wider group of LinkedIn users. We also aim to explore the views of the organisations using LinkedIn. Are they using the network for visibility, for recruiting only or could the information and individuals in the network give them competitive advantage?

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Social Networks' (SNs) Effect on SMEs: Focused Study on Saudi Arabia (S.A)

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Abstract: One latest example of the vital role of technology supporting businesses is the utilization of SNs. Although many research studies investigated SNs and their relation to business, but still there is no enough clear knowledge on how in particular SMEs can utilize them effectively; considering the fact SMEs don't have the budget nor the experience to copy an international or large business approaches and strategies. Additionally, SMEs play a major role in national and global economy and they represent the highest percentage of organizations in almost all developed countries. Recently in S.A, SMEs are receiving big support from the government and the commercial sector; and Saudi SMEs' percentage is increasing among all enterprises and they are providing large numbers of jobs in the private sector, too. Accordingly, this project has been carried out to fill the existing gap and to answer the questions what are the main unnoticed benefits SMEs can obtain by using S.Ns and what are the best practices SMEs can follow to efficiently implement SNs for facilitating and enhancing their business activities and expansion. This will be achieved by firstly reviewing available literature, then exploring the top-ranked SNs in S.A, Facebook, Twitter and LinkedIn and critically analyzing their influence on SMEs. After that, using a combination of qualitative and quantitative approaches; through questionnaires as a first stage and interviews as a second stage to assess and analyze the current situation of SNs adoption by both Saudi SMEs and selected British SMEs that have successful ventures in utilizing SNs for business; to have practical real-world data and knowledge. Finally, producing best practices framework for SNs implementation which will include both the technological and the managerial requirements. The frame work will guide Saudi SMEs to implement SNs effectively and successfully, thus benefit from all the possible positive effects of such knowledge based implementation and adoption.

Keywords: social networks, Saudi Arabia, SMEs improvement, e-business, virtual communities, business innovation

1. Introduction

SNs include everything from social discussion boards to massive knowledge exchange forums and communication mediums, which allow members to interact via the Internet to share common interests (Tickle et al., 2007, Lin, 2008) . Most organizations and mainly SMEs which becoming a primarily economic support factor in developed and developing countries are seeking a deeper understanding of SNs advantages and trying to develop new business strategies and technical plans to assist the decision-making processes and facilitate the adoption and employment of SNs in the most effective ways.

As this research focuses on S.A, which is a developing country economically, mainly in Internet network readiness, environment, and infrastructure it is considered among the fast developing information and communication technology (ICT) markets in the region. And SMEs represent around 95% of all Saudi enterprises (Al-Mahdi, 2009) and provides 60% of jobs in the private sector (Bundagji, 2005). Accordingly, SMEs play a major role in Saudi economy and largely influence the business sector. Thus, research studies focusing on SMEs in S.A is crucially important and a necessity to support the development and growth of such key player in the economy, which is one of the main motivators of this study.

Based on the above facts, the purpose of this study was formed to be an assessment and analysis to explore in one hand the status of some Saudi and British SMEs regard using SNs and how they can improve SMEs performance and on the other hand how Saudi SMEs can successfully employ SNs for their development and growth based on the analysis and interpretation of the study results.

2. Literature Review

2.1 Social Networks and WEB2:

Technology is very accessible and has two critical factors: the low cost of communication and the deregulated internet. These two factors have greatly facilitated the tremendous growth of social networks and the willingness of people to participate in them, to connect with others and to obtain knowledge (Plant, 2004). The term social networks or virtual communities defined as very well-known business models of the World Wide Web 1 that depend on social interaction among their members who share common interests, but not necessarily common geographic location (Tickle et al., 2007). In other words, they are websites that allow their members to interact using Internet-based technologies such as discussion boards and forums, real time chat, blogs and trading areas (Lin, 2008, Spaulding, 2010).

Although many companies recognize Web 2.0 and its importance, its vast disruptive impact is just beginning to be understood. As many describe it, it is a transformative force that is driving companies across all industries toward a new way of doing business. In fact, Web 2.0-enabled organizations are gaining an early-mover advantage in their markets (Musser et al, 2006).

It is a fact that the majority of highly ranked SNs are web 2.0-enabled and it was first labeled and defined by O'Reilly in an article titled "What is Web 2.0?" (2005) as "Web 2.0 is a platform delivers software as a service that is continually updated through new user content, where information is delivered through searching and collating data from a multitude of sources delivering rich user content whilst facilitating an architecture of participation" as cited in (Adebanjo and Michaelides, 2010, p.239).

2.2 Benefits of SNs for Businesses:

In general, and according to (Tickle et al., 2007) SNs can positively impact and benefit businesses by providing fast and inexpensive knowledge transfer and exchange and cost effective access to large amounts of information including customer feedback than ever before, holding part of some business activities such as product support and customer service allowing virtual exchange of knowledge between organizations and customers for more personal interaction through discussion forums, fan pages, company e-mails and online events and competitions, and increasing the chance of creating more business for the company because of pleased customers post positive comments on the company's social networks page or account. SNs work as a bridge that connect both new businesses with new potential customers because when a company advertises online, it is in fact advertising to an international market with lower price. SNs can be a very cost effective way of communicating between the organizations and their customers (Brown et al., 2002). Generally, SNs can positively affect resource allocation, positive word of mouth, website traffic, brand image, advertising and marketing and transaction fee revenue and product support and service delivery(Porter, 2004).

2.3 SMEs and Internet in Saudi Arabia:

SMEs are independent business organization where number of employees is not larger than a specific predefined number that slightly differ across nations mainly between 500 to 50 for medium enterprise, and less than 50 or 10 for small enterprises(Bahaddad et al., 2012). In S.A, SMEs represent around 95% of all enterprises (Al-Mahdi, 2009)and provides 60% of jobs in the private sector (Bundagji, 2005). According to the report released in 2010 by the Communication and Information Technology Commission (CITC) in S.A, Internet has become an integral part of the Saudi Society and Economy and the cost perception of Internet connection in KSA is becoming cheaper, and affordable. Internet penetration in small companies has increased from 66% 2007 to 81 % 2009 (CITC, 2010). With all the available facilities, yet advanced use of the Internet is less common amongst all enterprises in Saudi Arabia. Lack of identified need for internet is the key barrier for internet adoption as well as 'it is Not necessary for work'. This reflects the lack of awareness of benefits internet solutions such as websites, social networks, community of practice and more can provide SMEs with, and the lack of a systematic guidance on how to employ such affordable solutions in real business for development and improvement.

3. Research Methodology

To achieve the research objectives, the study will use a mixed methods approach, which is "the collection or

analysis of both quantitative and qualitative data in a single study with some attempts to integrate the two approaches at one or more stages of the research process" (Dörnyei, 2007, p.163). Therefore, a profound understanding and a more complete interpretation and representation of the issue can be provided than applying a quantitative or a qualitative method solely (Greene et al., 1989, Bryman, 2006, Bryman et al., 2008). In this research, close-ended questionnaires along with semi-structured in-depth interviews will be used. The respondents will be asked questions about their perception and use of SNs and what effect those networks have on them, if any. Collected data from questionnaire will be subjected to statistical operations for more accurate assessment to find the relation between different influences and elements of SNs and their effect on the improvement of business activities, whereas the data collected from the interviews will be analyzed and examined with different logic models to reveal relationships and patterns among key factors affecting the use of SNs in business. The study will include any random SMEs from Saudi Arabia with no specific criteria, but it will only include SMEs that have successfully adopting SNs from the UK. The number of participant will vary from each country as the study not intending to compare the performance of SMEs from both countries rather it aims to bench mark the activities and best practices from the uk compniaes to be part of the guidelines that saudi SMEs can follow for better SNs adoption and employments. For the interview the number of SMEs to participate will be determined by the result of the questionaire but estimated to be around 20% of the questionnaire participants. Participants have been identified based on their geographical location (UK companies, Saudi companies), their size (Small and medium size enterprises), their type (Business to Customers both service and product oriented) and their use of SNs. At the first stage, all potential participants will receive an introductory e-mail; explaining the study and asking them to participate. They would then receive an email to arrange how they will complete the questionnaire. At the second stage, based on the questionnaire result and level of company engagement in SNs as a business tool, some companies will receive another e-mail to schedule the interview meetings. The data collection process will be in english but as arabic is the mother langauge in Saudi Arabia and the researcher speaks flewent Arabic and english, she will carry the data collection processes out and be an interpreter whenver is needed. After data collection and describtion, the analysis and discussion of the results will be performed criticlly comparing the practical results of the research against the covred existing theories and literature to produce the best practices farmework for effective SNs adoption by SMEs in S.A.

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Content Quality and User Ranking in TurboTax AnswerXchange

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Abstract: TurboTax AnswerXchange is a social Q&A application built with open source technologies and scaled dynamically in response to variations in user traffic during the tax season. AnswerXchange content is a combination of tax and product related topics, and the users differ widely by the degree of domain expertise. We demonstrate that content type can be predicted with high precision using models trained on labeled datasets collected from the more qualified (or trusted) users. Predicting answer quality based on askers' votes is a more challenging task as product related answers receive a larger fraction of down votes compared to the tax related ones. This bias may reflect emotional aspects of the user experience with the tax preparation and needs to be accounted for in the models. Future work will explore the differences in answer quality perception between AnswerXchange content producers and consumers.

1. Background

AnswerXchange (http://ttlc.intuit.com) is a social Q&A site where customers can learn and share their knowledge with other TurboTax (http://turbotax.intuit.com) users while preparing tax returns. As users step through TurboTax interview screens, they can ask questions or view and search contextually relevant content. Users may also contribute to AnswerXchange by commenting on questions and answers, and voting answers up and down. AnswerXchange was created in 2007 and has generated millions of questions and answers that help tens of millions of users. A large number of answers come from non-compensated "super users" selected by moderators based on frequency (Figure 1) and quality of contributions. Pal et al (2011) proposed an algorithm for early super users' detection that was employed by Farzan et al (2012) for cohort socialization of potential super users in AnswerXchange. Additional references and details on the data collected in AnswerXchange can be found in these two publications.
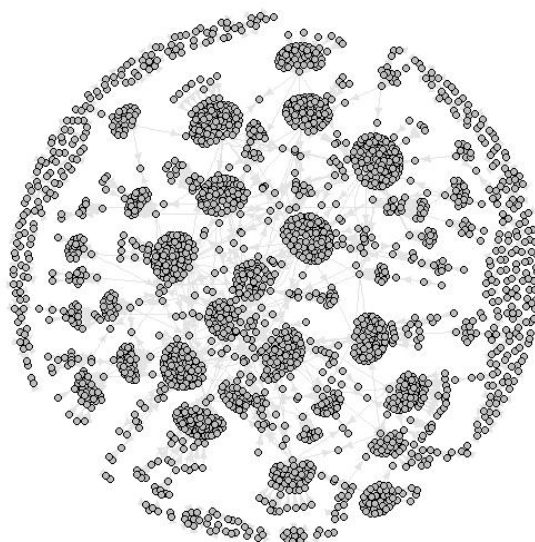
Figure 1: Directed graph of users asking and answering questions in the AnswerXchange from three hours of activity during the tax season. The distributed star topology is a manifestation of asymmetric relationship between content producers and consumers.

One of AnswerXchange goals is to prevent users from asking duplicate questions that is achieved by displaying contextually relevant content on the TurboTax interview screens and promoting search. The content needs therefore to be moderated to improve quality and relevancy of answers shown to users. Towards this goal, AnswerXchange employs a hybrid content moderation system to maintain quality standards and to conform to

the tax regulations and the TurboTax workflow. The system follows the social design principles (Kraut and Resnick, 2012) relying on trusted users (Intuit employees and super users), but also on classification and ranking algorithms to make it more scalable. Lastly, the AnswerXchange relies on a reputation system to distinguish trustworthy contributors from untrustworthy ones and to rank the answers they provide using quality metrics. This paper reports recent progress in developing the algorithmic part of the AnswerXchange moderation system - automated content type classification, trusted user expertise metrics and answer quality scoring based on aggregated counts of up and down votes. We define answer quality in a broad sense to include accuracy, clarity and completeness.

2. Content classification

By design, AnswerXchange user-generated content is a combination of tax and product related topics. Tax questions are semantically similar to publications by the Internal Revenue Service and by state tax authorities. Product questions are TurboTax specific and deal with pricing, choice of product version, and software issues such as installation or e-filing. Some questions are related to both types. Next, content type can be characterized by a content type score ranging from 0.0 (e.g. factoid tax question "What is AMT?") to 1.0 (e.g. informational software question "Where do I enter W-2 in TurboTax?"). This score can be computed with a predictive model trained on a labeled dataset. In this paper, we use dataset of 60,000 classifications collected from the AnswerXchange trusted users in 2010. An option to classify a question as tax or product related was part of question answering process and classifications were recorded immediately after a user read the question and submitted the first answer. The participation rate among trusted users was about 50%. The ranking algorithm was built with the "Random Forest" R package using term frequencies as model attributes. Figure 2 illustrates the algorithm performance on the test portion of the dataset. The second version of the algorithm (Figure 2) was built with logistic regression (GLM R package) to simplify deployment in the AnswerXchange production environment.
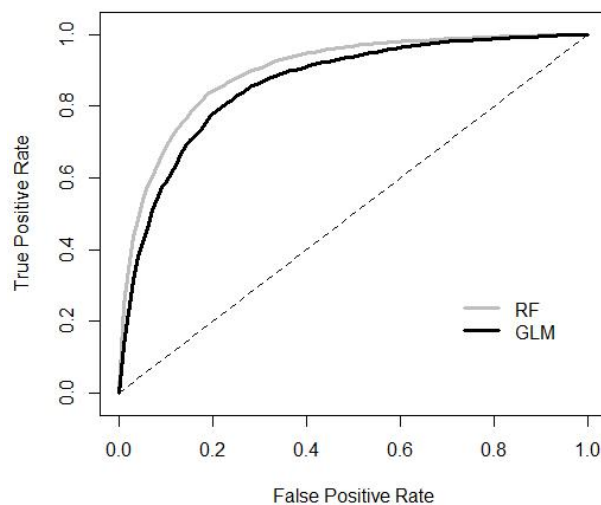
Figure 2: Receiver operating characteristic (ROC) curve for the AnswerXchange content type classifiers built with random forest (RF) and logistic regression (GLM). Dashed line shows ROC for a random classifier.

The classifier was applied to 200,000 unlabeled answered questions recorded in 2013. Based on computed scores, the questions have been ranked and separated into score deciles. Shown in Figure 3 are the fractions of answers submitted by each user group (super users, regular users and Intuit employees) by score deciles. The majority of answers in the tax domain came from the super users, while regular users contributed most in the category related to both tax and product content types.

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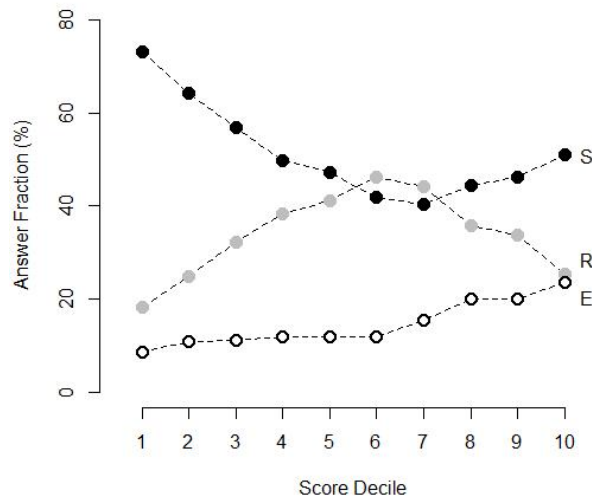
Figure 3: Answer fractions by regular users (R), super users (S) and employees (E) by score deciles. Scores were computed with the AnswerXchange content type classifier.

3. Up and down vote statistics

The AnswerXchange votes fall into two categories: votes from the askers (10% of all votes, askers' participation rate - 12%) and votes from the viewers (90% of all votes, participation rate - 2%). Askers' votes appear to represent answer quality more accurately than votes from the viewers whose satisfaction with the suggested answer may be impacted by the relevancy of search results.
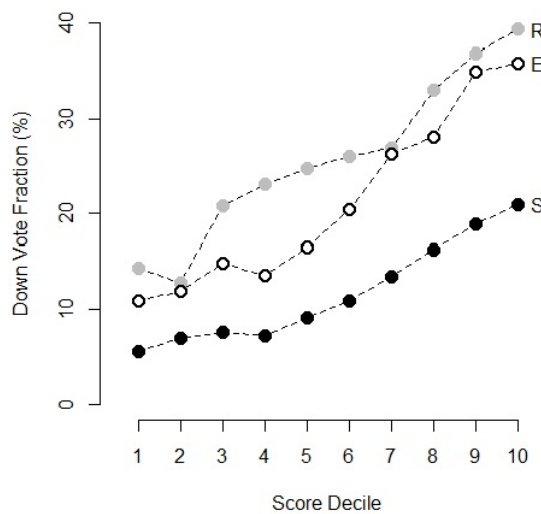
Figure 4: Askers' down vote fraction versus content type score decile for regular users (R), super users (S) and employees (E). Top deciles correspond to the product related content.

Shown in Figure 4 are fractions of down votes (aggregated number of down votes divided by the aggregated number of up and down votes) by score deciles. One can see that answers to product questions from each user group receive a larger fraction of down votes. A possible reason for this difference is that asker vote is a result of user experience not only with AnswerXchange, but also with TurboTax or the IRS, making it subjective and emotional. On the other hand, aggregated vote statistics are often reported in Q&A site dashboards to increase engagement of the most valuable and prolific contributors. As seen from Figures 3-4, however, these statistics may depend on contributors' preferences for particular content types. For example, a super user answering tax questions would get a smaller fraction of down votes, as compared to an employee answering product related questions. On the positive side, aggregated votes may still provide useful metrics to rank contributors by quality of answers when properly separated by content type. Given the asymmetric

relationship between content producers and consumers, the vote statistics may serve as proxy metrics for the AnswerXchange reputation system.

4. Predicting user votes

One way to understand asker motivation for voting answer down is to build a predictive model for the vote type and rank the model attributes by importance metrics (e.g. Liu et al, 2008). Specifically, we build the model for a binary target variable employing three types of model attributes. The first type accounts for the qualification and trustworthiness of the contributor, typically defined by standing in the reputation system or by mean utility of answers. We begin by normalizing all down votes received from askers by

$$w(score) = \frac{\bar{f}(1.0 - f(score))}{f(score)(1.0 - \bar{f})}$$

where $\bar{f}$ is the average fraction of down votes computed for all askers' votes. The rationale for normalization is to remove content type bias from the down vote statistics (Figure 4) and equalize trusted user answer quality metrics by score deciles. This is done individually for the top hundred most active contributors and then by user type for the remaining contributors. Next, we add linguistics attributes such as answer length, assertiveness and politeness. Based on over-the-phone surveys of AnswerXchange users, the askers are less satisfied with very short and very long answers with the optimal answer length being about three sentences. Finally, we add model attributes related to user experience with AnswerXchange and TurboTax, such as responsiveness of the contributor and the amount of tax refund. The model is built with 29,000 votes received from askers in 2013 and implemented with the "Generalized Regression" R package. Shown in Figure 5 is a ROC curve for the model.
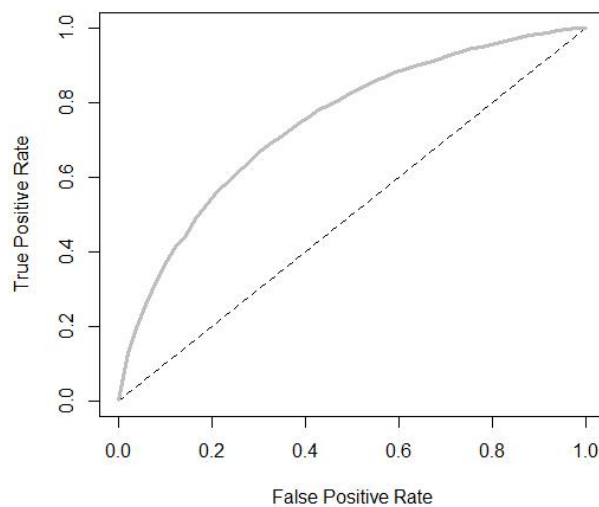
Figure 5: ROC curve for the asker vote classifier. Up vote fraction for the top 10% of answers selected by the classifier is 98% compared to 84% for all voted answers.

Wald statistics (Table 1) provide a measure to rank model attributes by importance. The two top attributes, as expected, are normalized down vote fraction and content type score decile. Answers from the contributors who have demonstrated good answer quality in the past are more likely to receive up votes in the future, and this is correctly captured by the model. Importance of content type and online platform attributes reflects emotional aspects of user experience with the tax preparation process and may implicitly account for the outcomes such as the amount of tax refund or the price of TurboTax software. Next, assertive answers that start with "Yes" or "No" are less likely to be voted down, while answers with embedded questions or web links are less likely to be voted up. Finally, the askers are less satisfied when the question remains unanswered for more than one day.

Table 1: Wald statistics for the top attributes of the asker vote model.

Attribute	Wald Chi-Square	Effect on vote
Down vote fraction	780	Down
Score decile	517	Down
Length of answer	324	Up
Assertiveness	306	Up
Web link in answer	160	Down
Question in answer	130	Down
Online platform	70	Up
Responsiveness	28	Up

5. Conclusion

The benefits of the algorithmic approach to AnswerXchange moderation are multifold. First, the vote classifier can be applied to answers without votes to identify the best answers and improve search relevancy by boosting the quality content. Next, tax related answers can be shared across different TurboTax versions, while product specific ones can be restricted to pre-defined customer segments. Lastly, the content type and asker vote classifiers can be used to generate FAQ collections for the tax domain to be shared outside of TurboTax. By comparing model performances shown in Figures 2 and 5, one can see that predicting content type results in a higher precision compared to predicting asker votes. This can be partly attributed to the lower quality of the training dataset on answer quality collected from the regular users. Typically, regular users perform better with easier tasks such as selecting answer or comment options when replying to a question. In 2009, for example, more than 90% of AnswerXchange answers were placed in the correct category by the users replying to questions. The collection of replies was used as a training dataset to build a predictive model and to automatically re-classify the remaining 10% of answers labeled incorrectly (Podgorny et al, 2012). On the contrary, answer quality does not appear to be an obvious concept for a typical AnswerXchange user to grasp. Our next task will be to explain the differences in answer quality perception between content producers and consumers for various content types. We are planning to extend our approach by building answer quality models using datasets collected outside of AnswerXchange by crowdsourcing providers such as CrowdFlower.

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Is the use of Social Media Within the NHS Supported by the 50 Plus Workforce and Used as a Development Tool?

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Abstract: The dynamic, ever changing and ubiquitous growth of social media used in the workplace, has the potential to be positioned as a learning platform tool used for capabilities development and skills enhancement, within the HRM learning and development strategy. With both the Age Discrimination Act of 2006 and the Equality Act of 2010, ending the mandatory retirement age, employees now has the opportunity to work longer in their organisations. This has contributed to a growth of the 50+ age range employees in the workplace. By 2012 the number of workers aged 50 to 64 has reached 7.7 million and this is an increase of 2 million since 2000 (Pertemps). The OECD identified that the employment rate in the population of the age range of 55-64 was 56.7% in 2005 and was 58.1% in 2012 (November 2013).The over 65s, still in employment has grown from 2005 with rates of 15.5% to 17% in 2012. The age profile is rising and more over 50s will be employed in organisations and be required to maintain their performance levels and share their skills set within the workplace with other employees who are used to using social media. The trend identified is that by the end of the decade a third of the workforce will be over 50. Both skills and behaviours will be required to be maintained and developed within this multigenerational workforce with an opportunity to use social media as a learning platform by engaging the 50 + aged workforce. Research methods .Use a questionnaire and focus groups within the health sector and identify and evaluate current research.For example Queen Alexandra College, an independent specialist college, catering for people aged 16 + with visual impairments and other disabilities, have 200 employees aged between 21 and 73, with 10% staff aged over 65.These older workers with skills and knowledge play an important role in skills development, by helping the college with skills transfer to develop younger staff. These staff mentor and coach to ensure continuality of capacity. How could social media as a learning platform support skills development within this multigenerational workforce?. Other initial research has identified that more companies are experimenting with social media, by them starting to integrate social technology into the way that they recruit, develop and engage employees. (Forbes) Deloittes are using Twitter and LinkedIn for employees to complete training modules. Results and Conclusion After research, will identify if the 50+ workforce within the health sector is engaged with social media as part of a learning platform. The value of the findings with be of use and relevance to HRM strategy as to how the 50 + aged employee within the health sector is engaged with social media as a learning platform to develop their capabilities and also coach other employees.

1. Background

The dynamic, ever changing and ubiquitous growth of social media used in the workplace, and within the wider society as a whole, has the potential to be positioned as a development tool within a Human Resource Management strategy. This development tool could be used for capabilities development and skills enhancement.

The manner in which people at home and at work communicate with each other, share and receive information has been radically transformed with the advance and proliferation of social media. S.Prentice and E. Huffman, Idaho National Laboratory 2008.

Social media is the use of blogs and micro blogs such as Twitter, and Facebook, LinkedIn, You Tube, Pinterest and Instagram.

2. Ageing Workforce

Coupled with the growth and acceptance of the use of social media in the workplace and at home is the rate of growth, within the UK, of an ageing population. The Office for National Statistics, 2013, indicates that both men and women show annual improvements in life expectancy at birth, over the past thirty years.

Coupled with the growth of an ageing population is the growth of an ageing workforce.

This ageing workforce has been facilitated by several Acts of Parliament. The Age Discrimination Act of 2006 (Employment Equalities (Age) Regulations 2006, gives people the opportunity to work longer and ends the mandatory retirement age of 65 for men and 60 for women.

The default retirement age in the UK was abolished in 2011 under the Employment Equality (Repeal of Retirement Age Provisions Regulation 2011). These Acts of Parliament have supported a growth of the 50+ age range employee, in the workplace. The World Health Organisation (WHO) defines an older worker as one who is between 50 and 70 years of age.

The number of workers aged 50 to 64 has reached 7.7 million in the workplace, as at 2012 (ONS 2012) and this figure is an increase of 2 million since 2000 (Pertemps). The OECD (Organisation for Economic Cooperation and Development) November 2012 identified that the employment rate in the population of the age range of 55-64 was 56.7% in 2005 and by 2012 this figure had grown to 58.1% of the population.

The over 65s still in employment has grown from the 2005 rates of 15.5% to 17% in 2012. Men retire on average at 64.8 years in 2013 and women on average 62.9 years. This is a rise from 63.9 years and 60.9 years in 2011, respectively. The trend is that by the end of the decade a third of the workforce will be over 50.

The older worker has been embraced by some employers i.e. B&Q who have experienced 39 per cent less short-term absenteeism after implementing age positive recruitment practices at one of their locations. (The Department of Works and Pension).

3. Staffing Within the NHS

The National Health Service (NHS) is the largest employer in Europe and within the South East of the UK a third of the workforce is aged 50+. The Luton and Dunstable Hospital in Bedfordshire has 16% of its staff aged between 45 -50. NHS Wales have identified that their age profile amongst medical and dental staff is 20% over the age of 50. (GMC General Medical Council .Christine Lang and Elizabeth Griffiths 2013).
The NHS has a set of specific issues based on an ageing workforce, within the Nursing and Clinical profession. The needs of this group of professionals include having to be continually trained and developed, in a cost effective manner. This is in order to meet the needs of the ever changing demands of the NHS in 21st Century Britain. (GMC) General Medical Council.

As the age profile is rising in the UK with longer expected life spans, more over 50s will still be employed in the NHS and other organisations. This workforce will be required to maintain and develop their skills and competencies in the workplace and this will have an impact on the HRM strategies, of these organisations.

"Frontline First Running", in its article The Red Light, November 2013, which contained a special report by the Royal College of Nursing, identified in its executive summary, that by 2016 there is the potential to be within the NHS a shortage of 47.545 registered nurses. There is also a 15% cut in the number of nursing student places commissioned since 2009/2010.

This report recommends that the government needs to maintain and ensure that the necessary investment in the education of its current nursing workforce takes place. This is in order that all staff have the skills to enable them to cope with and reflect the changing health care environment and also to ensure that the NHS is in a position to retain these vital staff members as part of a talent management policy.

4. The Use of Social Media in the UK

The UK social media statistics for 2013 identifies that by 2013 there were 33 million users of Facebook in the UK which is 62.49% of the on line population. (K. Pascoe 2013).The age profile and percentage use of these users is:

 18 -24 age range 23%
 25-34 age range 26%
 35 -44 age range 18%.

The age ranges of under 18 and over 45, which make up the remainder 33 % and their percentage of use is not identified.

By the end of December 2012 there were 200 million Twitter accounts in use. This translates into 34 million known accounts within the UK adult demographics. (K. Pascoe 2013). The age profile and percentage use of these users is:

25-34 age range 20%
35-44 age range 20%
 45 -54 age range 20%.

The age ranges of under 25 and over 54, which make up the remainder 40% and their percentage of use, is not identified.

5. The Use of Social Media in the UK Workplace

Social media can be defined as websites and applications that enable users to **create and share** content or participate in social networking (Oxford Dictionaries 2013).

Social media has opened up new ways for businesses to engage with customers; 23% of businesses responded to customer opinions, reviews or questions on social media, while 12% of businesses use social media to involve customers in the development or innovation of goods or services (Office for National Statistics).

ACAS (The Advisory Conciliation and Arbitration Services) has identified how social media has changed how employees are recruited. Research from the Institute of Employment Studies (IES), 13/8/2013, questioned 400 HR decision makers and identified that:

▪ 45 per cent of HR decision makers are using social media tools in recruitment and are using such tools as LinkedIn.

▪ The ways in which social media is used in the recruitment process include, searching for potential candidates online and 'screening' candidates by viewing their social media profiles on Facebook and viewing their LinkedIn profiles.

The use of Pinterest and Instagram can engage with customers. Organisations are using social media to engage in conversation and dialogue with customers. This can interest the consumer to go to the company website or visit the retail/trading outlet.

Social media is about customer engagement and connecting with prospective customers and is a powerful marketing tool. (The Institute of Directors, Brendan Walsh October 2013).

The Facebook Guide for Educators focuses on the school environment, and identifies that the under 18 population that use Facebook will engage with social media as a platform from which teaching and learning can be placed. On line platforms allow teachers and pupils to share knowledge outside of the classroom. Future learning can be accessed via an ever changing environment such as MOOCs (Massive Open Online Courses). A MOOC is a course of study made available over the internet without charge and open to a very large number of peoples. (Oxford English Dictionary).

The variety of social media used in the general workplace also includes blogs which can be used as a message board. These allow for commentary and ideas to be posted on line and commented on and discussed by other users. Then there are chat rooms and instant messaging, allowing dialogue between two or more people. There is also video blogging also known as vlogging, which allows individuals and companies to quickly post video content online. (Huffman).

Deloittes, the largest professional services network in the world by revenue and by number of professionals in over 150 countries, are encouraging employees to share badges earned through completing training modules via Twitter and LinkedIn. The organisation view this as a huge motivator and is an integral part of their HRM strategy.

Forbes 2012 identified that more organisations are experimenting with social media. Organisations have started to integrate social technology into the way that they recruit, develop and engage employees. Organisations are incorporating game mechanism into non game activities such as Learning and Development

programmes. A number of enterprises have become "gamified", building up a competitive atmosphere between employees.

6. The use of Social Media in the NHS

The General Medical Council identified web based application such as blogs and micro blogs (Twitter), as well as internet forums such as doctor.net and social networking such as Facebook and Linkedin. (Doctors use of social media 2013).The GMC raise issues of privacy and confidentiality and appropriateness when using social media and issue appropriate guidelines for use.

Dr Anne Marie Cunningham, April 2012, of Cardiff University, Identified that social media can be used beneficially, to connect with other professionals, and to open up dialogue and the flow of knowledge within networks such as within the advanced nursing practitioners network. This immediate flow of knowledge has the opportunity to be used within the NHS to indicate infection control mechanisms which are required to be promptly enacted and to share knowledge around emergency A. and E. scenario situations.

The Department of Health (2013) identifies the need to deliver high quality effective and compassionate care within the NHS. For this to happen, the Department of Health have identified the need to employ and retain the right people with the right skills with the right values. This has been the government's mandate to Health Education England from April 2013.

7. Research Methods

Research methodology possibilities could involve case studies, questionnaires, surveys and focus groups all within the target sector of the NHS. After consideration it has been decided to use questionnaires and focus groups as primary research and review literature and case studies within the health sector for secondary research. The sampling strategy will focus on the core and higher foundation doctors, consultants, matrons, advanced nursing practitioners and head of nursing staff within two NHS hospitals. The focus groups to date with senior nursing staff and Doctors within an NHS hospital have indicated that there are guidelines on the use of social media covering patient confidentiality and data protection. Social media is not used as a learning platform or forms part of an HRM strategy.

An example of a Case study is Queen Alexandra College, Birmingham, an independent specialist college catering for people aged 16 + with visual impairments and other disabilities. They have 200 employees aged between 21 and 73 with 10% staff aged over 65.These older workers with skills and knowledge play an important role in skills development in the workplace by helping the college with skills transfer to develop other younger staff, internally. They currently mentor and coach to ensure continuality of capacity.

8. Conclusions

Delivering high quality effective compassionate care; Developing the right people with the right skills and the right values – This is a mandate from the government to Health Education England April 2013. (The Department of Health 2013). With an ageing workforce social media could be used to develop these skills sets.

With the development of remote working and distance learning there are possible opportunities to develop the social media platform as a valuable learning and development tool. Research completed at the Idaho National Laboratory show social media's new role in emergency management, where effective and up-to-date information can be instantly communicated.

Current skills and behaviours will be required to be maintained and developed within the 50+ aged workforce within the health sector and this will be an HRM strategy and linked to the use and acceptance of social media.

Social media is used for recruitment and marketing and Facebook is used in schools as a learning tool but there is at present limited evidence of how this can be transferred to the NHS and specifically for a 50 + aged workforce .There is a strong argument for the role of social media to be a vehicle to maintain these skills amongst the current ageing workforce.

Current limited observations of the target groups have indicated minimal if any use of social media as a learning platform.

Social media used as a learning platform has the potential to be developed within the NHS and be part of an HRM strategy.

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Impressions of social media use by Dutch aid & development organisations

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Abstract: An online survey was conducted under Dutch development organisations active with social media. The results of this survey were analysed revealed interesting patterns of work-related use of various social media tools and target audience and reasons for using social media. Also the use of private accounts for work-related communication was analysed. The results show that most organisations mainly use social media for informing and more one-way communication rather than interaction.

Keywords: Social media, International development, non-profit organisations, ICT for Development

1. Introduction

In recent years the usage of social media has grown dramatically (Kaplan and Haenlein, 2010), and Dutch development organisations are not alone in considering how social media might help them achieve their aims. Social media use by many Dutch development organisations has increased (Mion and Heemskerk, 2009, Schellens, 2011). However, for many of these organisations, the benefits or the potential uses of social media in the development arena are not entirely clear. While the terms social media, social networks (SNSs) and web 2.0 are used interchangeably (Parameswaran, 2007, Iriberri and Leroy, 2009), social media can be said to share at least the characteristics openness, participation, connectedness and community (Mayfield, 2008). Zuniga and White (2009) argue that the relevance of social media in the context of aid and development covers four broad areas; connecting with other; collaborating with other people; creating and sharing content; and finding, using, organizing and reusing content. They argue that social media allows organisations and communities engaged in development activities to maintain small group communication, even when they are geographically distributed, and that social media can give potential access to a broad international audience (Woldhek and Kleef, 2009). In this context Information and Communication Technology as an enabler of development is referred to as ICT for Development (ICT4D or ICTD).

Thus, social media may bring potential or pitfalls for international aid & development purposes. For this work-in-progress paper the study is focussed to the question: how do Dutch aid & development organisations, that are already actively using social media, use social media for their work? This question is further deconstructed in:

- Which social media tools are being used by Dutch aid & development organisations?
- For what reason are they being used?
- Whom are they targeting at?
- How often do they use social media (for work-related purposes)?
- Did they use organisational or private accounts on these social networks sites for work-related communication?

An online survey was conducted under Dutch development organisations already active with social media. Data was retrieved from those organisations that are the first adopting social media usage in their organisation according to the technology adoption lifecycle. The population consists of Dutch civil society organisations in the international development cooperation sector and its actual size is 101 organisations (Partos, 2012), from which 80 are using social media frequently. The group of private driven development organisations and activities is larger in size - approximately 8,000 initiatives in The Netherlands (Linkis, 2012), but looking at financial and socio-economic impact the group of civil society (funded) organisations comprises the larger share (Kinsbergen and Schulpen, 2010) and therefore this group was chosen them as subject for this survey. Hence, the target group includes those aid & development organisations in the Netherlands who are already actively using social media.

2. Data Collection Via Online Survey

The survey approach refers to a group of methods which emphasize quantitative analysis, where data for a large number of respondents are collected through methods such as questionnaires, interviews, and these data are analysed using statistical techniques (Gable, 1994, Trochim, 2006). When looking at the formulated questions, the online self-completion questionnaire as survey method was suitable for collecting data (Bryman, 2004).

In order to get access to Dutch civil society organisations in the international development cooperation sector a couple of conferences and seminars were attended to get in touch with representatives of the target group. Some candidate respondents were approached after being introduced via acquaintances, i.e. "snowball sampling" (Heckathorn, 2002). Furthermore, as this research covers social media, it makes sense to use social media to interact with people interested in the field of social media for development. Therefore a social network community was set up, initially on the Ning platform called SoMe4D, which stands for Social Media for Development and later as a facebook group. Additionally, Twitter was used for communication with the target organisations and promotion of the survey.

The use of social network tools in combination with so-called offline networking activities (attending events from the surveyed organisations) has enhanced the response rate. From the 80 organisations that have been approached 54 have responded with filling in the online survey (67.5% response rate). The sampling method described here is considered purposive non-probability sampling (Trochim, 2006). Indeed the convenience of accessibility by already having established relationships with the aid & development organisations and the aspect of snow ball sampling to get access to more respondents proved to be useful for utilising the research instrument of online surveys. The purpose was to get in touch with aid & development organisations actively using social media and this selection criterion (on at least one social network and using this regularly) was applied when approaching the organisations. Approximately 80 organisations did fit that criterion.

3. Results

The first research question sought to determine the social networks sites (SNS) that the development organisations are using. From the development organisations 89% use Facebook and 91% have a Twitter account. Also LinkedIn and YouTube were often used, 65% respectively 63%. Mobile applications were not often used (6%) and a small percentage (9%) used other than the listed social media such as Ning, Yammer, Worknets or a self- developed social network.
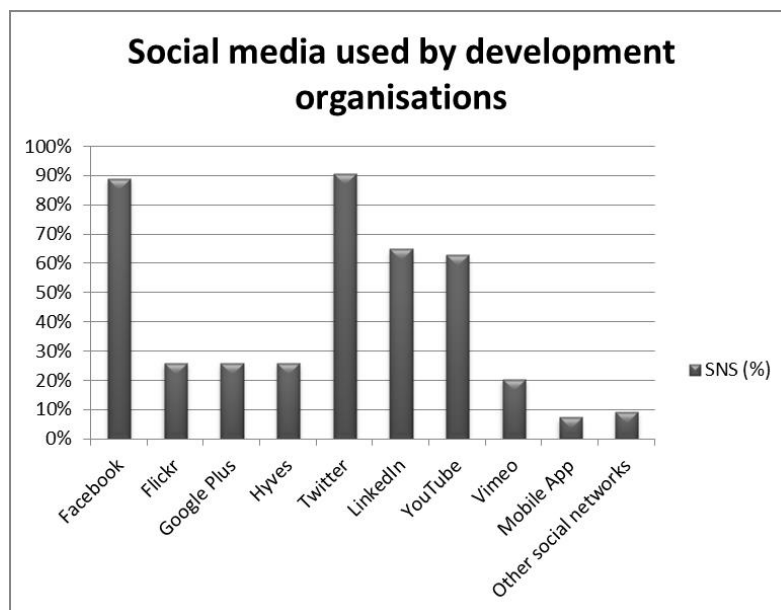

Figure 1: social networks sites (SNSs) used by development organisations.

The second research question focussed on the reasons for using social media. Almost all organisation use social media for informing their audience (96%). Branding is also import for most organisations (89%). Approximately half of the organisations use social media for raising awareness (50%), mobilising (56%) and

recruiting (48%), whereas 19% of the organisations have other reasons. They mentioned reasons such as collaboration, knowledge dissemination, transparency and being found on the social media.
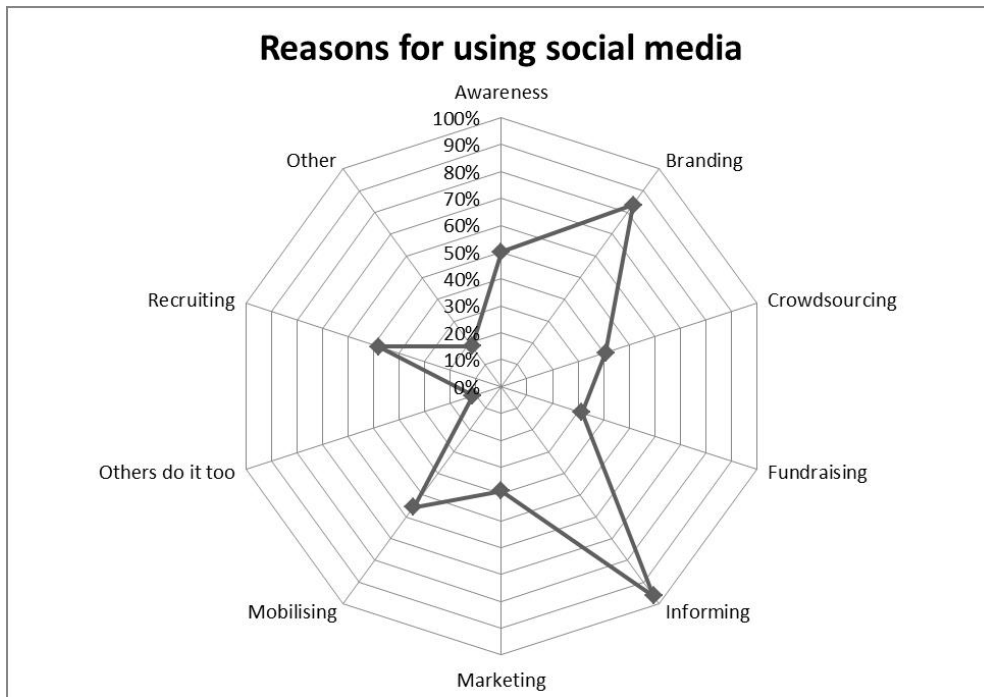
Figure 2: Reasons for using social media by development organisations.

The third research question was related to the target audience for the development organisations that are using social media. A majority of the development organisations (85%) used social media for targeting the Dutch population. Interestingly 60% used social media to target other development organisations. In the category other (19%) the development organisations mentioned companies, Dutch government and politicians and international audience.
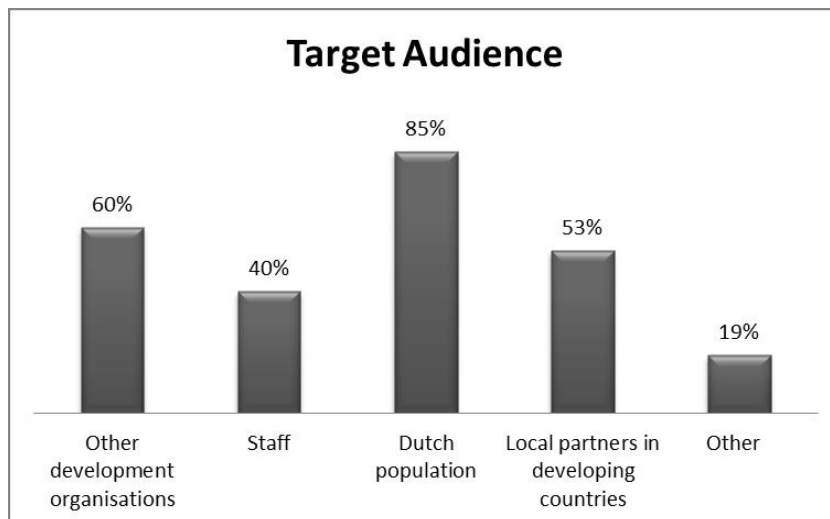
Figure 3: Audience targeted by development organisation when using social media.

The fourth research question dealt with the frequency of work-related social media usage. 51.9% of the respondents used social media multiple times per day for work-related purposes. Almost a quarter of the respondents (24.1%) used social media a couple of times per week for work-related activities.
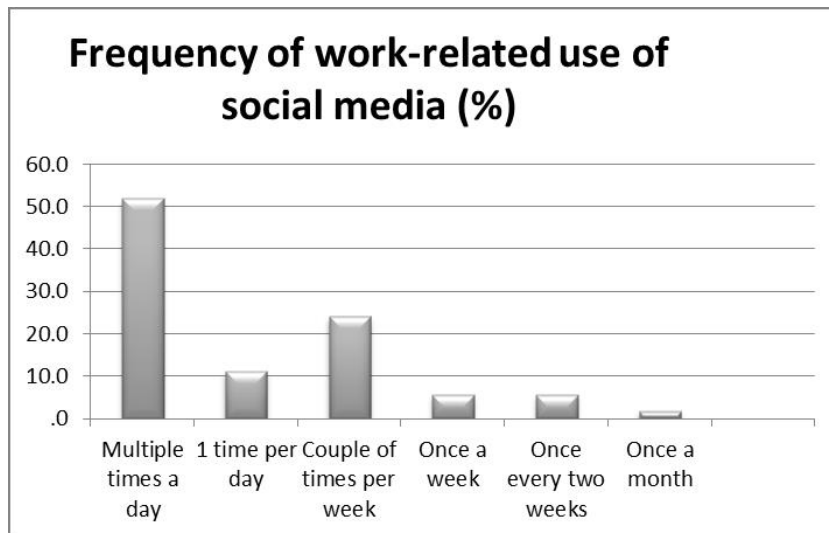
Figure 4: Frequency of work-related usage of social media.

The fifth research question looked at whether a private or organisational account was used on the social network sites for work-related communication. On Facebook 25% of the respondents used both private and organisational accounts for work-related communication, followed by 14% only using their private account for this kind of communication. Interestingly on Facebook (25%), Twitter (42.6%) and LinkedIn (42.6%) of the respondents used both accounts for work-related communication, whereas on YouTube 42.6% used the organisational account.
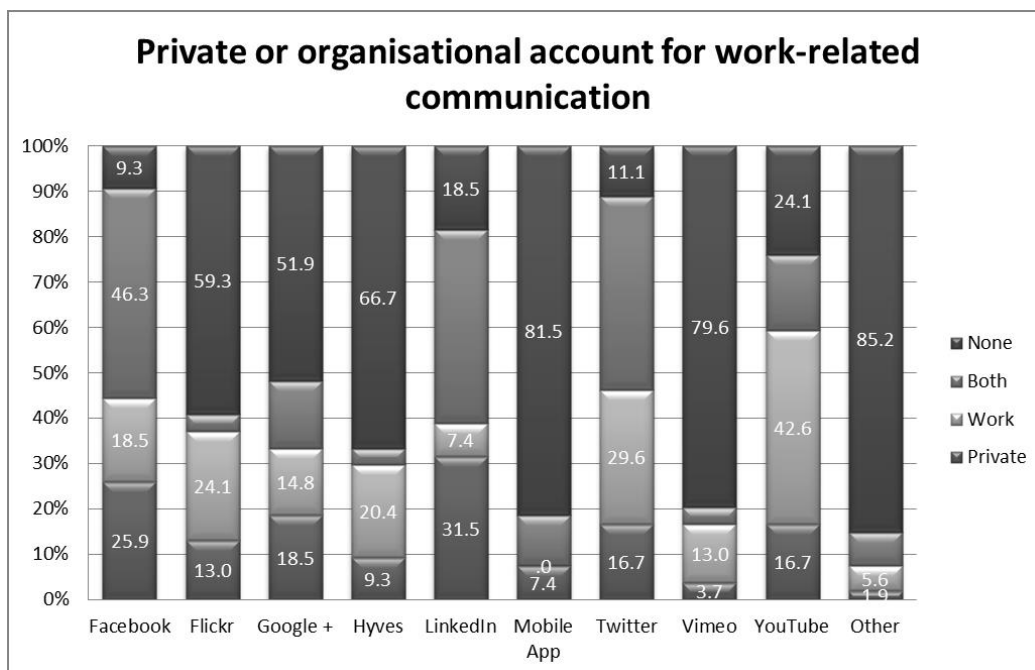
Figure 5: Private or organisational account usage on social networks for work-related communication.

The mean age of the 54 respondents of the development organisations was 34.5 years (SD =7.8 yr.) from which 65% female and 35% male respondents. From the respondents 39% had a profession in marketing & communication, 20% were field aid workers, 17% management and 17% mentioned other professions, such as volunteer, researcher or fundraiser. Only a small fraction (1%) had an ICT-related profession.

4. Discussion and Conclusion

The method of conducting an online survey has both advantages as well as disadvantages. It is useful in the context of examining ICT tools such as social media where the respondents can be informed about the survey via these social media. On the other hand personal contact may be limited and the study cannot always be explained in person (c.f. Trochim, 2006). The survey has provided an overview of social media use by Dutch development organisations (with the limit of the research scope). The limitations do not undermine the importance of the research and even provide ideas for future research.

The survey has shown that Dutch aid and development organisations do make use of social media related to their work in various ways. The respondents working at these organisations utilise some of the privately sued social media for work-related purpose. The profiles of the respondents in the organisations do show a variety of professions. Though the aid workers are present on social media, but not in a great number. The majority of the Dutch aid and development organisations in this survey did not use most interactive functions of social media, nor considered any social media (analysis) strategy as recommended by Waters (2007). Rather, they perceived social media mainly as a tool for information dissemination to stakeholders (Kenix, 2008, Guo and Saxton, 2014, Waters et al., 2009). Furthermore the results showed that organisations mainly use social networks as a one-way communication channel (Lovejoy and Saxton, 2012).

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Innovative Collaboration and Communication Models: From Social Networking to Social Enterprise : An example from Porsche's newly introduced digital working environment Carrera Online

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Abstract: People are communicative beings and have the need to share experiences and exchange information. With the onset of social media the possibility to establish new contacts and maintain existing ones all over the world has utterly changed people's perception of information and communication. The result is that almost everybody today is in a virtual network. Facebook, Twitter, and YouTube are only some of the highly successful social software applications which influence the way people interact and exchange information. These new modes and channels of communication from the private sphere do not stop at corporate boundaries but gradually and surely find their way inside companies – either officially or unofficially. Following up on this development, the current article explains and analyzes the milestones in the emergence of the Enterprise 2.0. The insights from the theoretical work are qualitatively validated within the scope of a case-study covering the design, implementation and introduction of a state-of-the-art digital working environment at Porsche.

People are communicative beings and have the need to share experiences and exchange information. With the onset of social media, the modes and types of communication have changed dramatically – both in the private and business sphere. Through the variety of information and communication technologies, reflected in internet usage, smartphone and tablet devices, new forms of communication and consumer behavior are rapidly evolving (Dolata 2011). For example, in order to participate in the social life of today's society, many private households use social media such as Twitter and Facebook. The possibility to establish new contacts and maintain existing ones all over the world has utterly changed past perceptions of information and communication. Digitized information has thus taken on a new meaning and importance in society (Eberspächer/Holtel 2010). In this context, the term "digital natives" has developed to describe young adults, who have developed a different perception of and relationship to media and communication. This is the generation which has been growing up with Wikis, Blogs and Social Networks. The result is that almost everybody today is in a virtual network.

These new modes and channels of communication in the private sphere, brought along by various technological advancements and summarized by the term **"social software"**, do not stop at corporate boundaries but gradually and surely find their way inside companies – either officially or unofficially. The introduction and use of various social software tools within or between companies is thus referred to as **"Enterprise 2.0"** (Eberspächer/Holtel 2010). Enterprise 2.0 does not, however, refer solely to the simple installation of a number of social software applications. Much more important is the appropriate adjustment of these tools to the existing corporate culture and processes, and their backing-up with specific organizational measures (Koch 2008). However, Enterprise 2.0 is not to be mistaken with Social Entrepreneurship, whose focus is a totally different one, namely the interaction between an enterprise and the social community in which it is (geographically) situated (Henkel et al. 2009).

McAfee (2006) points out that the use of Enterprise 2.0 technologies is not automatic and synthesizes different conditions for the successful implementation and adoption of social software in the corporate environment. Among these are: (1) the establishment of a receptive corporate culture open for collaboration and discussion; (2) the provision of a common platform as a form of shared workspace; (3) the carrying out of an informal roll out, which forgoes formal orders to use the new tools and instead offers opportunities for employees to discover features themselves; (4) strong managerial support as well as starting points to come into contact with the new digital environment.

In addition to the corporate environment-related prerequisites for the successful transformation of intranets into social business portals, there are also technological aspects regarding certain platform features which have to be considered (McAfee 2009). First and foremost, the platform solution should be open for everyone in the company who would like to contribute input or share their knowledge and professional experience. The

possibility and the motivation to author contents or create links in a corporate social environment build the basis for any Enterprise 2.0 solution. Because the focus in the Enterprise 2.0 is no longer on individual pieces of information, but rather on a composition of various inputs, a state-of-the-art search option is essential. In order for this smart search to work properly, there has to be a sufficient number of tags to categorize contents and internal knowledge resources. An extended feature, which generates employee-specific suggestions based on individual interests and/or current activities, further supports the adoption and increased usage of social software. Last but not least, the social software solution should also notify users when new content is added to their preferred topics. These signals could be sent in the form of e-mails, instant messages or per RSS-Feed.

The main benefits which Enterprise 2.0 solutions could deliver are drastically increased work efficiency in knowledge-intensive industries, enhancement of transparency in process-oriented work fields and a boost of the idea flow and innovation management. The use of social software in a corporate setting thus directly supports corporate communication, knowledge and information exchange, and improves team work. However, there are also threats which come with the use of social software. Corporate communication is still largely a bottom-down process at the majority of large and successful companies. As such, it reflects only one viewpoint – that of the upper management of the company – and the content is strictly an editorial matter. Providing everyone in the company with the equal opportunity to express an opinion on all topics is an issue which requires serious change management and negotiation skills. All of these insights and unresolved issues lead to the ultimate question: How do successful companies manage to make the most of their Enterprise 2.0 environment and stay on top of their game despite various internal and external challenges?

Although it would be impossible to find a universal answer to this question, it is still worth looking at examples of companies, which have successfully gone down the Social Business path and are already reaping the benefits. One such example offers the German sports car manufacturer Dr. Ing. h.c. F. Porsche AG based in Stuttgart, Germany. With the design, implementation, introduction and expansion of its state-of-the-art digital working environment *Carrera Online*, Porsche is gearing up for the onset of the next digital age characterized by social collaboration, employee engagement and competition for digital-native-talent.

The initial goal of the *Carrera Online* project (Rajs/Arweck 2013) was to create a new kind of news-, knowledge- and collaboration-portal at Porsche, which would bring employees to a new level of communication and cooperation. The challenge was to provide not only current pieces of information about the company, but also to enable employees to become actively involved in a network where they could express ideas and opinions, for example as comments or in blog posts. Furthermore, the new social platform was aimed at improving the collaboration between the different Porsche manufacturing plants. Altogether, what the management expected was more transparency top down and employee engagement at every level in the company. The corresponding challenges were analyzed and defined at the very beginning. Among the most important ones was, for example, the extremely heterogeneous target audience. The new social enterprise solution was meant to reach all employees, from the assembly line workers to the administration and upper management. The challenge in this case was to create a concept, which would equally match the different perceptions of the company depending on the area of expertise, different levels of IT-literacy and access to computer devices. On the technical side, the main hurdle was the migration of thousands of already existing intranet sites, including their new classification and integration into the new social landscape. In addition, everything had to be completed in a timely manner as word had spread that a new mode of internal communication was being planned and expectations were high. On 12/12/12, *Carrera Online* went live with over 10.000 users registering and creating individual accounts on the first day of the launch. After a very successful start, additional social features were gradually incorporated into the social enterprise platform during 2013 without interrupting its use. In 2014, the management is planning to further upgrade the new platform to a state-of-the-art social business platform, expanding it to encompass both customers and important suppliers.

There are several important milestones, both in the planning and implementation phase, which contributed significantly to the success of *Carrera Online*. The first one was the definition of clear goals and the setting of timed targets, upon which all departments involved had to agree. The decisive impulse for change came with the recognition that the existing intranet portal was reaching its performance limits, as it was considered outdated and functionally limited by the majority of employees. An analysis of the current condition zoomed in on the main weak points and served as a basis for the development of a target plan for the future. In particular, the new solution had to fulfill the following requirements: information source, orientation point, support

feature, identification with the company and networking opportunities. After setting the targets, the team in charge turned to choosing the underlying software technology. Stability and dependability, comprehensive security and potential for future development were among the crucial criteria which determined the final choice. In the design phase, the new *Carrera Online* had to pass the test of fulfilling both short-term and long-term strategic goals. In addition to offering a high-quality software solution, the new social platform had to be flexible enough to correspond to the extreme market dynamics of the automotive field. It had to be user-friendly – both for passionate digital natives and for employees, who had not been able to catch up with the social trend yet. And lastly, the implementation plan had to be feasible enough as not to overstrain employees, and at the same time not to disappoint their expectations. In order to achieve this, Porsche consciously decided to introduce this innovation in three stages and, contrary the theoretical recommendations, to do it with a comprehensive campaign in all media of internal communication. With the implementation of stage 3 in 2014, *Carrera Online* will be featuring all required functionalities (authoring, blogging, commenting, searching, streaming, rating etc.) of a state-of-the-art social business platform and set a leading example in the automotive industry.

The theoretical analysis of social media and its influence on social business provides several insights which are of high relevance for dynamic and innovative companies. The very short analysis in this article already points to the fact that social software has a very important role within corporations, especially for those dependent on the collaboration of their knowledge workers. These knowledge workers and, progressively, also the "digital natives"-employees are very efficient when they are able to exchange their experiences with other experts. For this purpose, companies are increasingly turning to Enterprise 2.0 applications to quench the thirst for more information and collaboration of their younger employees. The elaboration leads to the conclusion that Enterprise 2.0 has a great impact on the existing corporate communication as well as on the transparency of the organization and its processes.

* Further details regarding the different phases and activities in the Carrera Online project will be included in the poster accompanying this short paper

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Late PhD Research Paper

A Cross-cultural Quantitative Comparison of Social-Networking Site Use and Academic Performance

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Abstract: Research has shown since 2008 that social networking site (SNS) use comprises the majority of time spent on the Internet. The age distribution and large amount of time spent on SNSs evoke a new research era: How students use SNSs and how the uses of SNSs impact their academic performance. The main objective of the pilot study was to investigate the relationship between time spent on SNSs, frequency of SNS use, multitasking with SNSs, time spent studying, and Grade Point Average (GPA). In the first part, the cross-cultural differences between the United States (US; n = 444) and European college students (n = 346) were examined using path models. After examining the exploratory path model, a new survey was distributed with additional items (with existing reliability and validity evidence). The purpose of the proposed model is to define constructs using observed variables. These constructs are: Facebook® addiction, multitasking with SNSs while studying, using SNSs for school work, the amount of time spent on SNSs, college self-efficacy, and academic performance. A Structural Equation Model (SEM) will be developed using the listed constructs for this second part of this study. SEM has many advantages (e.g., flexible assumptions, use of confirmatory factor analysis to reduce measurement error, the ability to test path coefficients and invariance of factor loadings across multiple groups, etc.) compared to path analysis, and it will be used to compare the US and Turkish models. As a future study, only college students from Turkey will be compared to the US. The future investigation will focus on investigating the direct effects of Facebook® addiction on using SNSs for school work, multitasking with SNSs while studying, time spent on SNSs, and how those variables and college self-efficacy predict academic performance.

Keywords: Social Networking Sites, Multitasking, Academic performance

1. Introduction

Social-Networking Site (SNS) use comprises the majority of time spent on the Internet since 2008. Facebook® is the leading online SNS on which many people spend an exaggerated amount of time (comScore, 2013). More than one third of the world's population uses the Internet, and 34.3% of the Internet users and 12.1 % of the world population have Facebook® accounts (InternetWorldStats.com, 2012). North America and Europe have the highest numbers of Facebook® users compared to other geographic regions in the world. The age distribution among Facebook® users in the US roughly shows that 23.4% are 18-24 and 23.9% are 25-34 (checkfacebook.com), with a similar distribution in Europe. Additionally, almost one fourth of the total Facebook® users are college students.

The age distribution and large amount of time spent on SNSs evoke a new research era: How students use SNSs and how the uses of SNSs impact their academic performance. Researchers have focused on the negative and positive impacts of SNSs on students' academic performance. The recent literature illustrates a big debate showing a negative (Junco, 2012a; Kirschner and Karpinski, 2010; Stollak, Vandenberg, Burklund and Weiss, 2011; Rouis, Limayem and Salehi-Sangari, 2011) or no relationship (Ahmed and Qazi, 2011; Hargittai and Hsieh, 2010; Lubis, Ridzuan, Ishak, Othman, Mohammed, Hamid, and Izham, 2012; Pasek, More, and Hargittai, 2009) between time spent on SNSs and academic performance (i.e., Grade Point Average [GPA]). However, few studies have examined whether multitasking with technology (e.g., using SNSs) while studying impacts the relationship between SNS use and academic achievement (Fox, Rosen and Crawford, 2008; Jacobsen and Forste, 2011; Junco and Cotten, 2012; Karpinski, Kirschner, Ozer, Mellot and Ochwo, 2013; Xu, 2008).

Multitasking is defined as the simultaneous execution of two or more processing activities at the same time. Many individuals have assumed that they are capable of doing this without any loss of efficiency or effectiveness, and that there has been a specific evolution of our brains to allow this (Kirschner, Sweller and Clark, 2006; Sweller, Kirschner and Clark, 2007). However, researchers have shown that switching between tasks frequently, when compared to carrying out tasks in sequence, leads to poorer learning results in students and poorer performance on tasks (American Psychological Association [APA], 2006; Ophira, Nass and Wagner, 2009). Thus, perceived level of multitasking in general or specifically with SNSs may have a direct or indirect

negative impact on academic performance (Ellis, Daniels and Jauregui, 2010; Gabre and Kumar, 2012; Golub and Miloloža, 2010; Junco and Cotten, 2012; Karpinski et al., 2013).

Researchers are beginning to examine cultural differences in SNS use. Culture, which can be seen as the shared perception of social environment, shapes the way that people behave, the way that they interact and communicate with each other, and how they build relationships with each other (Gudykunst, Matsumoto, Ting-Toomey, Nishida, Kim and Heyman, 1996; Hofstede, 2001). Research has shown that cultures or cultural contexts (e.g., US compared to Europe) can influence both the patterns of media usage and attitudes toward them (Garramone, Harris and Anderson, 1986; Papacharissi and Rubin, 2000). Therefore, cultural differences due to multitasking (while using SNSs) may exist, which in turn may impact GPA. The pilot study addressed whether time spent on SNSs has an impact on GPA, including other observed variables such as multitasking and hours spent studying. Path models based on previous research and theory were developed to describe the above relationships. In addition, two separate path models were compared for the US and Europe as a pilot study examining cross-cultural differences.

2. Pilot Study

Cross-cultural comparisons are becoming an important research topic in investigating the relationship between SNS use and academic performance. Additionally, the recognition of the negative impact of multitasking on this relationship was cited numerous times as an important variable to consider. It is important to examine these relationships simultaneously with more sophisticated analyses. For this pilot study, a negative relationship was expected between SNS use and academic performance. The main research question was: "What is the relationship between time spent on Social-Networking Sites (SNSs), frequency of SNS use, multitasking with SNSs, time spent studying, and Grade Point Average (GPA)?" The second research question included: "What are the differences between the United States (US) and European models examining the relationship between time spent on Social-Networking Sites (SNSs), frequency of SNS use, multitasking with SNSs, time spent studying, and Grade Point Average (GPA)?"

The following hypotheses (e.g., H1 – H4) were investigated (see Figure 1):

(H1): Time spent on studying has a positive and direct relationship with students' GPA.

(H2): Time spent on the SNSs has a negative and direct relationship with students' GPA.

(H3): Having SNSs on in the background while studying has a positive and direct relationship with total social networking hours.

(H4): Using SNSs multiple times per day has a positive and direct relationship with total social networking hours.

3. Methodology

3.1 Participants

Data were collected online from multiple universities in the US and Europe. The composition of participants is discussed in detail in the results section.

3.2 Measures

The survey consisted of five sections: Section 1 is demographic and general in nature (e.g., age, major, multitasking perceptions); academic information is provided in Section 2 (e.g., GPA, hours spent studying, extracurricular involvement); the third section asked about computer and Internet use (e.g., hours spent on the Internet, computer familiarity). Section 4 was specific to SNS use (e.g., types of SNS used, minutes of SNS use, multitasking and SNS use). Finally, Section 5 explored the open-ended student reflections on SNS use. Validity evidence was provided by reviewing the survey for several validity criteria: (1) Clarity in wording, (2) Relevance of the items, (3) Use of Standard English, (4) Absence of biased words and phrases, (5) Formatting of items, and (6) Clarity of the instructions (Fowler, 2002). Two faculty and two graduate students used the above guidelines to review the survey. Based on their comments, it was revised prior to administration.

GPA was self-reported and was placed on a scale from 0 to 4.0. Time spent studying and SNSs were open-ended items. The frequency analysis of one of the continuous variables, hours spent studying, showed that

participants appeared to be interpreting it as a Likert scale, with responses gathered primarily in five categories. Therefore, time spent studying was transformed into a Likert Scale (i.e., 0= Less than 1 hour; 1= Up to 2 hours; 2= Up to 3 hours, 3= Up to 4 hours, and 4=More than 4 hours). The general frequency of SNSs use (i.e., 0 = Every 3 months, 1 = Every month, 2 = Every week, 3 = Daily, 4 = Multiple times per day) was measured on a 5-point Likert scale as well. The act of multitasking with SNSs while studying was collected by asking, "Do you use SNSs or have SNSs on in the background while studying?", and it was a dichotomous variable (i.e., 0=No, 1=Yes).

3.3 Procedures

Institutional Review Board (IRB) approval was obtained from Kent State University. Data (N = 790) were collected online through a survey-hosting website from multiple universities in the US and across Europe. Data collection occurred primarily through e-mail invitation to complete a web-based survey.

3.3.1 Overview of Analyses

"Causal modeling" or "the method of path coefficients" (i.e., Path Analysis [PA]), an extension of multiple regression models (Klem, 1995), is the appropriate method to examine the hypothesized relationships between the observed variables as shown in Figure 1 (Lleras, 2005; Schumacker and Lomax, 2010). A path diagram was used to illustrate the hypothesized relationships. In the path diagram, the connections among observed variables are represented by two types of arrows: a straight arrow (i.e., representing the causal relationship between the two variables) and a curved two-headed arrow (i.e., representing the simple correlation between the two; Loehlin, 2012). Descriptive statistics of the data were analyzed using Predictive Analytics Software (PASW) Statistics version 18.0 (SPSS, Inc., 2009). LISREL 8.80 Edition was used for the PA and LISREL-PRELIS, a preprocessor of data prior to running LISREL, was used to render the correlation matrices (Jöreskog and Sörbom, 1993). The common steps (i.e., Model, Model specification, Model identification, Model estimation and Model testing) used to examine the path model.
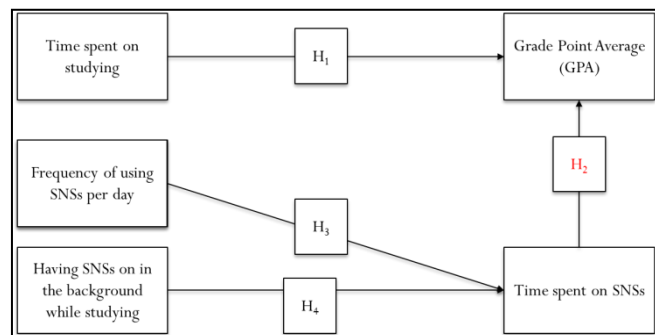
Figure 1: Proposed conceptual framework

4. Results

4.1 Outliers and Assumptions

The data were screened for outliers in the full sample and in the US and European samples (i.e., $z>\pm2.58$). There were no extreme values on any of the main variables. All the variables had some missing data, but this was less than 2%, which is ignorable or not systematic (i.e., less than 5% on a single variable; Kline, 2011). Preliminary examination of the data revealed that the normality assumption was violated in each group (see Table 1; $z>\pm2.58$). Therefore, WLS estimation method was appropriate with the asymptotic covariance matrix (Schumacker and Lomax, 2010). Based on the sample size recommendations by Bentler (2007), the present sample size (N=790) was sufficient to test the proposed model including covariates with a 50:1 N:q ratio (where q represents the number of free parameter estimates) – the recommended ratio is between 5:1 and 10:1 (i.e., 5 to 10 cases for every parameter estimate).

4.2 Participants

There were 444 participants (56.2%) from the US (e.g., Ohio, Georgia, New York, etc.) with the remaining participants from European universities (n = 346; 43.8%; e.g., United Kingdom, Germany, Netherlands, Turkey, etc.). There were 513 (64.9%) undergraduate and 277 (35.1%) graduate students with mean ages of 22.41 (*SD* = 9.42) and 25.54 (*SD* = 7.08), respectively. 222 (28.1%) were males and 564 (71.4%) were females. This is "normal" for the primary population, which was predominantly Social Science/Humanities majors (e.g., Sociology, English, Education; n = 491; 62.2%). Others identified themselves as Natural Science/Engineering (e.g., Biology, Chemistry, Economics.) majors. Finally, the majority of participants were White (n = 683; 86.5%).

4.3 Descriptive Analysis of Main Variables

Descriptive statistics (see Table 1) are displayed for the US and Europe samples. The US students' GPAs on average were 3.40 (*SD* = .53), and European students' GPAs, when linearly translated to a US based 4- point scale, were 2.73 (*SD* = .54). Student reports of hours studying per day were higher for the US students compared to European students (t = 2.42, *df* = 778, *p* < .05). All participants indicated using SNSs with Facebook® being the most popular (n = 772; 97.7%). Other SNSs used included Twitter, Hyves, MySpace, and Orkut. In the US, 278 students (62.6%) and in Europe 179 students (51.7%) claimed to use SNSs multiple times per day. Additionally, another significant difference between two groups reported was the time spent on SNSs. The US students claimed to use SNSs slightly more on average (*M* = 2.41, *SD* = 1.92 hours/day) than European students (*M* = 2.11, *SD* = 1.76 hours/day). With regard to multitasking with SNSs while studying, the higher number of the US students compared to European students, indicated that they do use SNSs or have them on in the background while studying (n = 273 [61.5%] and n = 174 [50.3%], respectively). In the overall sample, except the relationships between hours of daily studying and multitasking with SNSs (r = -.10, *p* > .05); and GPA and frequency of any SNS use (r = -.06, *p* > .05); all the relationships between the variables were statistically significant.

Table 1: Descriptive Statistics for the US and European Samples

Study Variables	US (*n* = 444)			European (*n* = 346)		
	M (*SD*)	Skewness	Kurtosis	*M* (*SD*)	Skewness	Kurtosis
GPA	3.40 (.53)	-6.03	-2.14	2.73 (.54)	2.08	-1.59
Hours of daily studying	1.56 (1.31)	3.64	-4.12	1.33 (1.32)	5.52	-2.42
Hours of daily SNS use	2.41 (1.93)	12.79	13.17	2.11 (1.76)	13.48	14.53
Frequency of any SNS use	.12 (.91)	-4.61	-7.43	-.16 (1.09)	-4.33	-2.45
Multitasking with SNSs	.62 (.49)	-4.18	-7.65	.51 (.50)	-.22	-7.66

4.4 Data Analysis

The WLS estimates for the overall, the US and European models are shown in Table 2. The path coefficients are standardized regression coefficients (i.e., beta weights). All paths except, SNSHRS and GPA were hypothesized to be positive in direction; all paths were significant in the model (*p*<.01). These standardized coefficients allow comparisons between the relative magnitude (i.e., strength and sign) of the effects of different explanatory variables in the model. Thus, with standardized path coefficients it is easier to determine which variables are more influential in the model. Time spent on studying had a direct and positive impact on students' GPA whereas time spent on SNSs had a negative direct impact. SNSs frequency and multitasking with SNSs, both had a direct and positive impact on time spent on SNSs. 10% of variability in GPA was explained by time spent studying and SNSs and 25.5% of variability in time spent on SNSs was explained by the frequency of SNSs use and the act of multitasking with SNSs while studying.

All paths, except SNSHRS and GPA were hypothesized to be positive in direction; all paths were significant (*p*<.01) in the US model. 38.5% of variability in GPA was explained by time spent studying and SNSs and 32.5% of variability in time spent on SNSs was explained by the frequency of SNSs use and the act of multitasking with SNSs while studying. All paths were significant (*p*<.01) and time spent on studying had a direct and positive impact on students' GPA in the EU model, and this impact was similar to the US sample. Time spent

on SNSs had a negative direct impact, but not as high compared to the US. For SNSs frequency and multitasking with SNSs, both had a direct and positive impact on time spent on SNSs. 8% of variability in GPA was explained by time spent studying and SNSs and 19.4% of variability in time spent on SNSs was explained by the frequency of SNSs use and the act of multitasking with SNSs while studying.

Table 2: *Weighted Least Squares Estimates and Selected Fit Indices for the Path Models*

Description	Overall (N = 790)	US (n = 444)	European (n = 346)
Paths			
Study Hours → GPA	.21**	.21**	.20**
SNSs Hours → GPA	-.22**	-.55**	-.20**
SNSs Frequency → SNSs Hours	.28**	.24**	.31**
SNSs Multitasking → SNSs Hours	.30**	.40**	.21**
Equation Error Variances			
GPA	21.58	8.91	15.20
SNSs hours	17.57	11.96	12.77
Variables			
Variance (Study Hours)	28.20	21.11	18.60
Variance (SNSs Frequency)	28.09	21.08	18.63
Variance (SNSs Multitasking)	28.10	21.12	18.66
Covariance (Study Hours and SNSs Frequency)	-2.43	-4.30	-.09
Covariance (Study Hours and SNSs Multitasking)	-2.06	-5.95	2.13
Covariance (SNSs Frequency and SNSs Multitasking)	11.51	10.13	6.27
Selected Fit Indices			
X^2	21.11**	2.67	1.58
Root-Mean-Square Error of Approximation (RMSEA)	.03	.00	.01
Standardized Root-Mean-Square Residual (SRMR)	.03	.01	.01
Goodness-of-Fit Index (GFI)	.99	.99	.99
Adjusted Goodness-of-Fit Index (AGFI)	.98	.99	.99

Note. For the paths, the standardized estimates are reported. *p<.01. **p<.001.

All the fit indices for the overall sample, except the Chi-square statistic, indicated a good fit of the data to the hypothesized model. The next step included testing two models independently for the US and European student groups (see Table 2). All the fit indices in the US and European samples indicated a good fit of the data to the hypothesized model.

5. Discussion

The main objective of this pilot study was to investigate the relationship between time spent on SNSs, frequency of SNS use, multitasking with SNSs, time spent studying, and GPA. This study addressed whether time spent on SNSs has an impact on GPA, including other observed variables such as multitasking and hours spent studying. Path models based on previous research and theory were developed to describe the relationships. In addition, two separate path models were compared for the United States (US) and Europe as a pilot study examining cross-cultural differences.

Results of this study for the overall data showed that time spent studying has a positive impact on students' GPAs and time spent on SNSs has a significant negative impact. Furthermore, frequency of SNS use and multitasking with SNSs while studying had an impact on the amount of time spent on SNSs in a positive manner. In other words, the active SNS users spent more hours on SNSs, and that had a negative impact on their GPAs. Results also indicated that there were some similarities and differences between student groups from different world regions. Students in the US sample had significantly higher GPAs and reported higher amount of time spent on studying compared to European students. However, the impact of time spent studying on students' GPAs did not differ between the two world regions.

While the frequency of SNS use and multitasking with SNSs were found to impact the time spent on SNSs, differences were found between the two samples. Multitasking with SNSs had a higher impact on the total

amount of time spent on SNSs in the US sample, whereas the frequency of use was relatively smaller compared to the Europeans.

A significant difference between the two samples was found between time spent on SNSs and GPA. The negative impact of SNS use on their academic performance was stronger for the US students. This result indicated the extensive use of SNSs had a negative impact on the academic performance for both groups, but especially for the US students. Those findings were also parallel to the qualitative data analysis presented in Ozer and colleagues (2013). The researchers reported a higher number of European students' perceptions about positive impacts of SNSs on academic performance. European students stated that they were using SNSs for school work and the patterns included sending messages to their classmates, easily connecting with their friends, and communicating for school projects. Additionally, in the same study, most of the US students discussed the negative impacts and mentioned SNSs being time consuming and distracting (Ozer et al., 2013).

5.1 Limitations

Due to the design of this research, this study has some limitations. The results may have low generalizability for all countries in Europe and all states in the US. Although generalization to the US and Europe as a whole is nearly impossible, few studies have examined cultural differences even though this could play an important role in SNS use. Culture shapes the way that people behave, the way that they interact and communicate with each other, and how they build relationships with each other (Gudykunst et al., 1996; Hofstede, 2001). Research has shown that cultures or cultural contexts can influence both the patterns of media usage (i.e., amount and/or duration of use) and attitudes toward them (Garramone et al., 1986; Papacharissi & Rubin, 2000). Future studies should consider examining SNS use, specifically taking culture and cultural differences into account.

The voluntary response sample also is a limitation in that there is no way to corroborate self-reported information; unfortunately, this is often the nature of Internet-based survey research (Karpinski et al., 2013). Additionally, recruiting methods may have biased sample towards individuals who use social media, since recruiting and data collection were both electronic. Future studies should find alternative methods of collecting data (e.g., transcripts for student GPAs; time spent data reports from Facebook® Inc.).

Another potential limitation of the study was the measurement of variables as were reported as respondents' perceptions (i.e., self-reported time spent studying and on SNSs per day, multitasking with SNSs while studying, SNS use frequency). In essence, this pilot study does not have the data of the actual times spent studying or on SNSs. The possible invalidity of individual reports of their time studying and SNS use may be problematic. In reality, participants in this study may not know how much time they spent studying or using SNSs, whereas there may also be some bias in willingness to report honestly. Junco (2013) found a strong positive correlation between self-reported and recorded time spent on Facebook®; self-reported amount of time is expected to be an indicator of the actual amount of time the participants spent on SNSs. Those finding may also be relevant for study time. Determining the most accurate ways to collect these data (i.e., using additional standardized measures) will heighten the validity of future studies' findings.

5.2 Future Directions

Research and the media have shown that students from any part of the world use SNSs extensively and there are some students who addictively use SNSs (comScore, 2013). Thus, it is not unreasonable to assume that students may use SNSs while partaking in academically-related activities (i.e., studying), which may have an impact on their academic performance. The current pilot study aimed to add to the burgeoning body of theoretical and empirical literature from a cross-cultural perspective using path analysis method.

The goal of the current study was to examine the relationships among the time spent on SNSs, frequency of SNSs use, multitasking with SNSs, time spent studying, and GPA using PA. Furthermore, this pilot study served as a basis for conducting Structural Equation Modeling (SEM) using latent variables of SNS use, attitudes towards multitasking, and academic performance. As a future study, in the light of existing pilot study, the relationships between latent variables will be examined.

The path analysis method underlies the SEM approach. However, SEM provides a more powerful alternative to PA and other regression techniques and it allows more flexible assumptions (i.e., explicitly correlated error

terms, interactions, nonlinearities, and data level). Additionally, while PA accommodates only measured variables, SEM can model latent variables that cannot be directly observed in data but rather are inferred from measured variables. The use of multiple indicators of a construct helps to reduce measurement error and increase reliability. Thus, using standardized measures of the variables discussed in this pilot study, the relationships between the latent variables will be included using new constructs: polychronic attitudes, multitasking with SNSs while studying, intensity of Facebook® use, Facebook® addiction, the amount of time spent on SNSs, and academic performance.

As a future study, only Turkey (i.e., ranked 4th after the US, Indonesia, and United Kingdom with respect to the total number of Facebook® accounts) will be compared to the US. Thus, the following research hypotheses will be investigated in the US and TR models:

(H1): Facebook® addiction has a significant positive impact on using SNSs for school work.

(H2): Facebook® addiction has a significant positive impact on multitasking with SNSs while studying.

(H3): Facebook® addiction has a significant positive impact on time spent on SNSs.

(H4): Using SNSs for school work has a significant positive impact on time spent on SNSs.

(H5): Using SNSs for school work has a significant positive impact on multitasking with SNSs while studying.

(H6): Using SNSs for school work has a significant positive impact on students' academic performance.

(H7): Multitasking with SNSs while studying has a significant positive impact on time spent on SNSs.

(H8): Multitasking with SNSs while studying has a significant negative impact on students' academic performance.

(H9): Time spent on SNSs has a significant negative impact on students' academic performance.

(H10): College self-efficacy has a significant positive impact on students' academic performance.

The future investigation will focus on the following main goals: (a) Testing if Facebook® addiction and intensive SNS use impact academic performance, (b) Identifying the variables that directly or indirectly impact SNS use and academic performance, (c) Understanding the impact of Facebook® addiction on general SNS use, and academic performance, (d) Indicating relationships between the variables, and (e) Probing the differences between university students from different cultures: the United States (US) and Turkey (TR).

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A DEA Application for Hotels Facebook Posting

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Abstract: The hospitality industry distribution channels suffered a profound transformation with Internet generalization and more recently with online social networks (OSN). In this paper we analyze Facebook data from 50 Hotel pages and test different DEA models to create a benchmarking tool. Based on the analysis of various DEA models we can clearly classify efficient and non-efficient organizations and propose benchmarking references so that non-efficient companies can understand how to make improvements in their social network presence. The paper concludes that marketing teams can use these models to determine their online social presence against their peers to adjust and improve their publishing activity. In addiction, our comparison between the 50 top brands shows efficiency segmentation according to the page size. There seems to be a clear evidence of Facebook Page Life cycles and different growing stages for each page.

Keywords: Online social network, data envelopment analysis, Facebook, e-marketing

1. Introduction

It is still scarce research on the use of Web 2.0 and social networks in the tourism industry (Line & Runyan, 2012). Current state-of-art do not present methods to measure social-networks presence efficiency beyond mere data analytics and comparison reports provided by third-party services. The hospitality industry has adopted Web 2.0 and Social Networking Sites (SNS) over traditional marketing channels (Park & Gretzel, 2007, Sigala, 2003, Martin & Isovaki 2013). Literature review finds Internet presence and e-marketing strategies adopted by the travel industry but little attention has been given to the particular field of social networks (Line & Runyan, 2012).

A long way has evolved since Conner (2011) found that hotel chains (with the exception of Hilton, Sheraton, Embassy Suites, and Best Western) had no significant presence on Facebook. None had more then 50,000 fans at the time of their research. Hence, it is important to study and develop methods to evaluate social networks presence efficiency of hotel chains and hotel units. Our research focuses on the latest trends in e-marketing and seeks to shed light on other concepts of consumer interactivity in SNS.

2. Hospitality and Social Networks Sites

2.1 Characterizing Social Networks Sites

Web 2.0 is the evolution of standard read-only websites, which opened the web to user generated content (Anderson, 2007). Online social networks (OSN) share three main features: (1) public or semi-public user defined profiles containing personal information, (2) unidirectional or bidirectional connection with a list of other profiles, usually called friends, fans, or followers, and (3) visualization of own links or friends' links within the platform (Boyd & Ellison, 2008). Social-network adoption altered the way users connect with brands and companies. Users search for brand or organization related information more on OSN than on official web pages (Dei Worldwide, 2008). The marketing potential of OSN is the network nature of users' connections and the ease with which messages get spread through that network. Moreover, large audiences are accessible at low costs (Mislove et al, 2008).

For users, OSN allow users to feel connected and participate in a topic of interest as a community. Community commitment can increase brand loyalty (Bigné, Mattile & Andreu, 2008), which in turn is positively associated with organizations' performance through user rephrasing and electronic word of mouth (Jang et al, 2008). A positive social experience can alter consumer intentions toward a product, service, or event. The consumer may be induced to admire, recommend, or purchase the product or service (Lee & Xiong).

For companies, the technology enables access to market information, consumer trends, and direct communication with consumers (Lueg et al, 2006). OSN serve various functions that include: (1) viral marketing, (2) business development, (3) outbound communications, (4) complaint management, (5) positive feedback publication, (6) fan club connection, and (7) recommendation testimonials (Treadaway & Smith,

2010). Regarding specific OSN, the most used platform is Facebook, followed by Twitter, YouTube, and Flickr (Dwivedi, Yaday & Venkatesh, 2012, Escobar-Rodrigués & Carvaial-Tuiilo, 2013). Facebook is a gathering place of consumers that can be used to spread information and raise market presence (Hsu, 1012, Pöyry,, Parvinen & Malmivaara, 2013). Companies use Facebook to engage with customers by creating the majority of the content of their pages.

2.2 Hospitality Presence in OSN

OSN has been considered the technology innovation that had the most impact on the travel industry (Xiang & Gretzel, 2010) and it threatens traditional promotion methods (Martin & Isovaki, 2013). The industry has long been using Internet as a communication channel to engage with prospective visitors (Sigala 2003). Not only hotels promote an active use of OSN, institutions such as the European Travel Commission openly recommend the adoption of such technologies (New Media Trend Watch, 2013). Hotels should upgrade their traditional informational and transactional presence on the web and grasp the potential of interactive and social technologies available. Reported Facebook usage by Taiwan hotels and proposed the use OSN to gain insight knowledge and positively interact with the audience. Some recommendations were that Hotel webpage managers had to carefully choose language and promote interactive messages. In the travel industry, users can use OSN to share experiences in the form of photos, videos, or text and review hotels and destinations (Nusair et al, 2013). Martin & Isovaki (2013) reported on hotels that use social networks to feed sentiment analysis gaining customer insights. Other data mining processes have been deployed.

However, other authors distrust a direct connection between Facebook success and organizational performance in the travel industry. Pöyry, Parvinen & Malmivaara (2013) advocate that the participation effect on business performance is dubious, and companies should not rely on such relationships. Furthermore, they disprove the existence of a relationship between OSN participation and purchase and referral intentions. Consumers appear to use Facebook page brands to seek information, just as they traditionally do in company websites. Publishing relevant information could be more important than focusing on active members and promoting participation.

3. Measuring Efficiency of Hospitality Facebook Posts

3.1 Application of Data Envelopment Analysis on the Internet

Efficiency is the ability of converting resources or effort (inputs) into desired results (outputs) (Coelli, Rao & Battese, 1998). Data Envelopment Analysis (DEA) is a methodology to evaluate the efficiency of Decision Making Units (DMUs) that convert multiple inputs into multiple outputs. The optimal performance is the best-observed performance within the study group. There are no limitations on the type of inputs and outputs to be used as long as they respect the following restrictions: (1) they must reflect a managerial interest in the process' efficiency; (2) it is assumed that optimizing efficiency presumes minimizing inputs and/or maximizing outputs, (3) input and output units can vary among themselves but are equal for each DMU (Cooper, Seiford & Zhu, 2011). DEA fits our research need since it allows managers to measure efficiency in past processes supporting future decision-making and imposes few restrictions or assumptions (Cooper, Seiford & Tone, 2007).

The methodology has already been used to evaluate efficiency in e-commerce platforms. Serrano-Cinca et al (2005), Lothia, Donthu & Yaveroglu (2007), Pergelova, Prior & Rialp, (2010), Shuai & Wu, (2011), developed DEA applications in different Internet marketing scenarios. Our research focus on the Facebook social media platform is based on two factors: (1) it is currently the most used OSN with more than 1 billion users (The Wall Street Journal, 2013), (2) it offers a free search tool that allows automated collection of public information, the Facebook Graph API. To the best of our knowledge, no earlier research or work has focused on measuring the efficiency of social networks activity, let alone specifically for the hospitality industry using Facebook pages.

3.2 DEA Models

We propose the use of DEA to evaluate social media activities' efficiency in the business environment. DEA is appropriate because (1) it is n empirical method, (2) no formal definition of input-output relationship is necessary, (3) it suits multiple output process evaluation, (4) it allows benchmarking, (5) it identifies sources of inefficiency, and (6) it does not require financial information. Since DEA requires few assumptions, it is possible to approach efficiency evaluation in many ways, especially with digital marketing, in which it is difficult to

match allocated resources to results. More specifically, two possible approaches are to evaluate process efficiency as the conversion of resources to the company's objectives, or as the conversion of resources to company-consumer interaction performance. We used R statistical software (R Development Core Team, 2008) to develop program scripts to handle, organize, and process data sets. To calculate DEA models we used Benchmarking package (Bogetoft & Otto, 2013).

The different models are used to describe the nature and behavior of technologies in the real world. The correct set of restrictions reflects the intrinsic behavior of the technology. However, since DEA has not been used to study the efficiency measure in Facebook page activity, we cannot fully predict the impact of those restrictions propose a single, definitive model. For this reason we will subject the data to five different models according to those restrictions and assumptions. Input/output orientation emphasizes the managerial power in the process. According to greater management pressure or environmental factors, DMUs' managers may be inclined to reduce investment or enhance the process outcome (Golani & Roll, 1989). We assume that Facebook administrators are aligned with marketing teams and have control of only the publication behavior that they manage. For this reason, all models are input oriented given the perception that efficient Facebook pages can achieve the same engagement levels with fewer posts. According to the activity pattern, models identify benchmarks for each inefficient DMU.

3.2 Dmus, Inputs, and Outputs

We consider Decision Making Units (DMUs) as being an official Facebook page and we will evaluate the hotel company-consumers relationship efficiency on that platform. We seek only pages marked as being a Hotel. Some Hotel units or groups categorize their page as a Company or Travel/Leisure, however many other industries are present in those categories. Hence, a DMU is a Facebook Page created by a Hotel brand and is characterized by a publishing behavior that outputs a certain user response.

As the focus of research is the Facebook activity, Inputs can be classified as the publishing behavior of the pages. The publishing behavior compresses the number of publications by type. The type of publication can be: *video, link, status, photo, offer, question*, and *swf.* This object classification is in accordance with the Facebook Graph API. By empirical observation, the number of *offer*, *question*, and *swf* publications is extremely low. Therefore, inputs will be considered as the overall number of publications for a given time period of the remaining types: *video, links, status*, and *photos*. Page fans could be included as an input given that the size of the page can influence the engagement potential. However, it can be argued that the Facebook activity itself can contribute to the pages' popularity, and as a result, page fans would be considered as an output. Given this interpretation duality, and since managers cannot directly control the number of fans the page has, we consider page fans as neither an input nor a direct output.

Although negative responses and criticism to brands may be present in the data, we consider that a greater number of shares, comments, and likes represent a successful brand presence on Facebook. We propose the engagement levels as valid outputs of OSN activity. Engagement in the form of comments, likes, and shares is considered to be an important metric to determine the users' reactions to the transmitted messages (Conner, 2011). Other authors argue that higher levels of participation can, in fact, reflect greater purchasing intention (Phang, Zhang & Sutanto, 2013). Two different approaches are proposed to better understand output behavior. In the first approach Outputs take into account the absolute response values of users, i.e., the total number of shares, likes, and comments. In this case the page dimension is not taken into account. Absolute values may tend to favor pages with a higher number of fans since there is a larger pool of users targeted by news feed. To include the page dimension as a factor, a second set of models is used considering as Outputs the total engagement rate. Total engagement rate is the ratio between the absolute values of shares, likes, and comments and the number of fans the page had at the end of the collection period.

Therefore, considering the combination of DEA models and Outputs, we propose the ten models described in Table 1 to evaluate the efficiency of Hotels' Facebook activity.

Research Model	Output	DEA Model Frontiers
1.1	Absolute	Free disposability hull, no convexity assumption

1.2	Absolute	Variable returns to scale, convexity, and free disposability
1.3	Absolute	Decreasing returns to scale, convexity, and free disposability.
1.4	Absolute	Constant returns to scale, convexity, and free disposability
1.5	Absolute	Increasing returns to scale, convexity, and free disposability.
2.1	Rate	Free disposability hull, no convexity assumption
2.2	Rate	Variable returns to scale, convexity, and free disposability
2.3	Rate	Decreasing returns to scale, convexity, and free disposability.
2.4	Rate	Constant returns to scale, convexity, and free disposability
2.5	Rate	Increasing returns to scale, convexity, and free disposability.

4. Data Set and Results

We identified the top 50 company-initiated brand pages ranked by the number of fans and categorized as *hotel* (Quintly, 2013). An algorithm was programmed to collect data from each page using Facebook Graph API. The collection included all publishing history and the number of shares, likes, and comments reached by each publication. The aggregation of number of posts by type and the total number of shares, likes, and comments is the base data set to employ our DEA model.

4.1 Data Set Characterization

The top 50 Hotel pages in Facebook listed by number of fans by July 2013 (Appendix Table A1). Some popular hotel chains are not on the list Hotel firms that classify their Facebook page as a Company or as Travel/Leisure are mixed with a variety of other industries such as travel agencies, theme parks, monuments, and attractions sites. We chose to study pages that classified their presence on Facebook as being a Hotel. Nevertheless, these initial data are enough to conclude that Hotel presence on Facebook has grown since Conner (2011) studied the subject. In 2011 only four hotel firms had a significant presence on Facebook, none with more then 50,000 fans. The current average value for the top 50 pages is 109,000 fans. The distribution of page fans is shown in figure 1. Figure 2 shows the number of posts those pages have published in the collection period. The graphs share the same order. They suggest no apparent correlation between the number of fans and the number of posts.
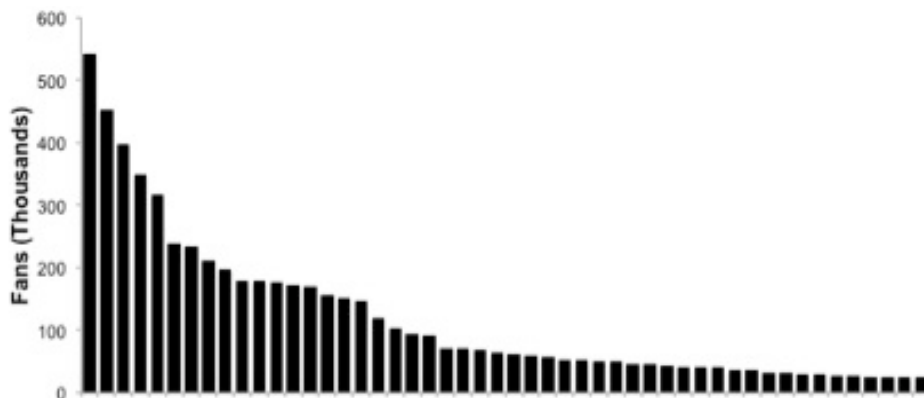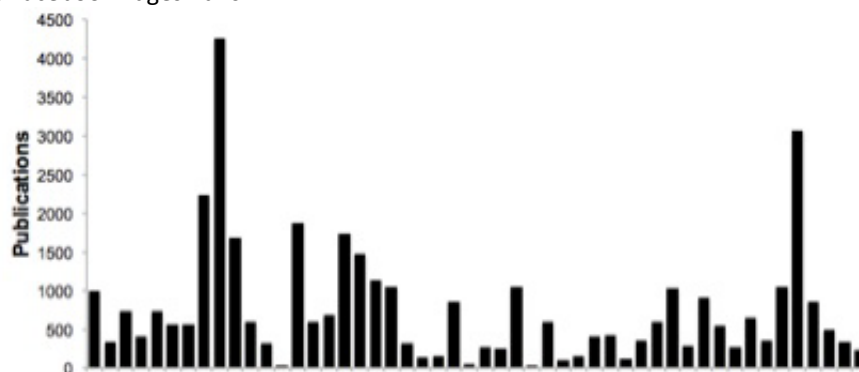

Figure1: Sample Facebook Pages' fans.

Figure 2: Number of DMU publications. DMUs are order according to number of fans has showed in Figure 1.

Only at the end of 2011 were all 50 pages operational and demonstrating regular posting activity. The data set was truncated to retain posts published between January 1st 2012 and June 3rd 2013. From January 1st 2012, those 50 pages published 38,075 publications (excluding deleted ones), which received over 5 million likes, more than 280,000 comments, and were shared more than 460,000 times. Data was filtered by page and we compiled the number of publications per type and total number of shares, likes, and comments to construct the input and the two output tables.

4.2 Results

Due to the extensive nature of DEA results and corresponding analysis we will focus on the combined Efficiency score of all models represented in table 1.

Table1: All models efficiency scores.

| DMU | Fans | Efficiency score | | | | | | | | | |
		1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5
1	541492	1.00	1.00	1.00	1.00	1.00	0.44	0.25	0.25	0.21	0.21
2	453806	1.00	0.38	0.30	0.30	0.38	0.33	0.17	0.05	0.05	0.17
3	397837	0.87	0.52	0.52	0.44	0.44	0.25	0.10	0.10	0.10	0.10
4	350056	1.00	1.00	1.00	1.00	1.00	1.00	0.41	0.40	0.40	0.41
5	316960	0.74	0.63	0.63	0.59	0.59	0.56	0.16	0.16	0.16	0.16
6	238724	1.00	0.75	0.74	0.74	0.75	1.00	0.32	0.32	0.30	0.30
7	234883	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.72	0.72
8	212354	1.00	1.00	1.00	0.87	0.87	0.89	0.61	0.61	0.34	0.34
9	197343	1.00	0.70	0.70	0.65	0.65	0.51	0.29	0.29	0.24	0.24
10	179008	0.35	0.16	0.15	0.15	0.16	0.12	0.05	0.05	0.05	0.05
11	178922	0.79	0.26	0.24	0.24	0.26	0.29	0.12	0.10	0.10	0.12
12	176212	1.00	0.19	0.17	0.17	0.19	0.14	0.11	0.09	0.09	0.11
13	171890	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14	169475	1.00	1.00	1.00	1.00	1.00	1.00	0.63	0.63	0.55	0.55
15	156678	0.95	0.24	0.24	0.24	0.24	0.27	0.13	0.12	0.12	0.13
16	151413	1.00	1.00	1.00	1.00	1.00	1.00	0.53	0.53	0.49	0.49
17	147419	0.32	0.20	0.20	0.20	0.20	0.24	0.12	0.12	0.12	0.12
18	119188	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19	103108	0.74	0.53	0.53	0.53	0.53	0.65	0.51	0.50	0.50	0.51
20	93859	1.00	0.74	0.74	0.74	0.74	1.00	0.79	0.79	0.67	0.67
21	92815	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DMU	Fans	Efficiency score									
		1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5
23	70399	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
24	69254	1.00	0.86	0.86	0.85	0.85	1.00	1.00	1.00	1.00	1.00
25	63155	1.00	1.00	0.25	0.25	1.00	1.00	1.00	0.41	0.41	1.00
26	60766	0.72	0.49	0.42	0.42	0.49	0.72	0.42	0.40	0.40	0.42
27	59662	0.74	0.31	0.27	0.27	0.31	0.74	0.34	0.34	0.34	0.34
28	57179	0.70	0.18	0.15	0.15	0.18	0.61	0.26	0.26	0.26	0.26
29	53025	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	51878	1.00	0.35	0.35	0.35	0.35	1.00	1.00	1.00	0.44	0.44
31	50653	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

32	50573	1.00	1.00	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
33	46278	1.00	0.57	0.47	0.47	0.57	1.00	1.00	1.00	1.00	1.00
34	46158	1.00	0.61	0.61	0.60	0.60	1.00	1.00	1.00	1.00	1.00
35	42662	1.00	0.74	0.68	0.68	0.74	1.00	1.00	1.00	1.00	1.00
36	41446	1.00	0.87	0.66	0.66	0.87	1.00	1.00	1.00	1.00	1.00
37	41358	0.86	0.34	0.34	0.33	0.33	1.00	0.77	0.77	0.70	0.70
38	40535	1.00	0.34	0.28	0.28	0.34	1.00	0.89	0.89	0.58	0.58
39	36388	1.00	1.00	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
40	35512	0.56	0.19	0.15	0.15	0.19	1.00	0.73	0.73	0.39	0.39
41	31839	0.80	0.15	0.12	0.12	0.15	0.90	0.53	0.53	0.31	0.31
42	30832	0.65	0.17	0.15	0.15	0.17	1.00	0.47	0.47	0.47	0.47
43	30316	0.75	0.44	0.42	0.42	0.44	1.00	1.00	1.00	0.92	0.92
44	29385	0.72	0.24	0.23	0.23	0.24	1.00	0.78	0.78	0.64	0.64
45	28281	0.62	0.14	0.14	0.13	0.13	1.00	1.00	1.00	0.44	0.44
46	26890	0.50	0.50	0.19	0.19	0.50	1.00	0.50	0.50	0.50	0.50
47	25710	0.82	0.35	0.34	0.34	0.35	1.00	1.00	1.00	0.62	0.62
48	24978	0.34	0.23	0.23	0.22	0.22	0.85	0.73	0.73	0.73	0.73
49	24929	1.00	0.39	0.34	0.34	0.39	1.00	1.00	1.00	1.00	1.00
50	24722	1.00	0.94	0.86	0.86	0.94	1.00	1.00	1.00	1.00	1.00

Observation indicates that changing outputs' nature reveals a shift in efficiency classification. In absolute output models, the most efficient pages are those with more fans, while for models with output rates this concentration shifts to medium and small pages. The percentage of efficient DMUs for free disposability and no convexity assumption (model 1.1 and 2.1) is high (approximately 60%). The remaining models present fewer efficient DMU. Only four DMUs are consistently efficient across the 10 models.

Table 2: Percentage of efficient DMUs in each model

Model	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	2.5
% of Efficient DMUs	0.58	0.30	0.24	0.22	0.28	0.66	0.42	0.40	0.32	0.34

5. Discussion and Conclusions

5.1 Discussion of Results

We have presented the output of one DEA model (1.2) and the efficiency scores of all 10 models. The goal of the ten-model comparison is to determine which models may contribute to determine efficiency measurement and benchmark power. We can observe that the convexity assumption relaxation (models 1.1 and 2.1) does not help to identify efficient DMUs as they considered 58% and 66% of DMUs as efficient, respectively. This confirms Bogetoft & Otto (2011) view on convexity assumption: convexity brings out best practices instead of a mere efficiency categorization.

For the remaining models we can observe the contrast of considering the absolute or relative user response as the output values. Considering that pages are listed from most popular to less popular, in the first 5 models, where output is the absolute number of users' responses, the majority of efficient DMUs are in the upper half of the population, meaning that the most popular pages are the most efficient. By having more fans those pages are able to collect higher absolute user responses with the same number of publications. By normalizing the user response as a percentage of fans that engage with the page (models 2.1 to 2.5), the concentration of efficient DMUs shifts to the center and bottom of the population. Neither popular nor moderately unpopular pages are the most efficient. We can attribute this to two factors:

- Pages with more fans fail to keep their followers active at the same ratios as smaller pages.
- Some small pages failed to attract users and/or failed to become popular in the first place.

This may demonstrate the Facebook page lifecycle. Pages that grow to become popular have a mid-phase in which their fan base grows while maintaining higher engagement rates. When they are overgrown, they start failing to maintain users' activity.

Constant or variable returns to scale do not seem to cause a great difference in efficiency classification. By observation some DMUs' technologies behave according to increasing returns to scale, while others' appear to show decreasing returns to scale. This can be seen by comparing efficiency scores and slacks in models with those restrictions against models with no restrictions, such as variable or constant returns to scale. The authors consider models 2.2, 2.3, 2.4 or 2.5 as the most suitable for assessing page efficiency. Models 1.1 and 2.1 yield no valuable distinction between DMUs. Models 1.1 to 1.5 use absolute value, failing to distinguish popular pages that have a larger user base. The remaining four models yield very similar results. This also indicates the integrity of the overall DEA methodology to access efficiency.

5.2 Implications for Practice

We can find no reason for differences in engagement rates of pages with similar posting behavior. It can be argued that the content of the publications has a direct impact on response. For this reason, benchmark identification may help organizations to explore why and how other pages can reach higher engagement rates. Managers should use the models to determine whether or not they belong in a group of efficient pages in terms of user response. If the Facebook page is classified as inefficient, we suggest adjusting the number of publications. Managers can understand what type of publication they are overproducing and where there is missing potential. Nevertheless, we strongly believe that the content itself plays a very important role in user response. To compare content with pages that are efficient, they should observe pages considered to be efficient and marked as benchmarks for their page.

5.3 Limitations and Future Research

As Pöyry, Parvinen & Malmivaara, T., (2013) advocate, massive participation of members may not reflect a positive impact on business performance. We propose that further studies should use our research focus and performance indicators to prove or disprove a direct relationship of OSN presence efficiency and firms' performance. Also, considering only the number of publications by type is not the only efficiency measurement. The effective efficiency of Facebook pages may be related to some aspects reported in earlier studies, such as the visual appeal, photo illustrations, well organized content, assorted offers, and the presence of promotions. Research has found that the effort hotels make in creating a quality presence on the web is positively related to the hotels' category (Díaz & Koutro, 2012). The category of hotels and hotel chains in our sample can be collected and merged with our publishing behavior data set to update the conclusions about Facebook presence. Since we have analyzed a wide time frame, we intend to use panel data configurations per month to determine pages that are consistently efficient, how efficiency changes according to the number of fans, and if there is a clear seasonality in Facebook hotel pages' activity.

We suggest opening a new research strand of data analysis regarding publication behavior in order to model factors that may contribute to greater engagement. Intuitively, the publication content is the main factor that contributes to engagement, but data analysis on the page fans, page category, post hour, weekday, post type, and frequency may explain part of users' responses. Another strand of research would be to combine user comments with sentiment analysis tools. However, the difference between sharing, linking, and commenting drivers may reveal positive or negative responses to publications without using complex algorithms. The motivations to like, share, or comment, or any combination, may reflect a positive or negative sentiment.

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Appendix

Table: A1. DMUs list and corresponding number of fans by 3rd July 2013.

Page	Name	Fans	Page	Name	Fans
1	ARIA Resort & Casino	541,492	26	Wilderness Hotel & Golf Resort	60,766
2	Holiday Inn	453,806	27	Harrah's Las Vegas	59,662
3	Great Wolf Lodge	397837	28	The Standard Downtown LA	57,179
4	Bellagio Las Vegas	350,056	29	Hotel Wellenberg in Zurich	53,025
5	Caesars Palace	316,960	30	W Taipei	51,878
6	Mandalay Bay Resort and Casino	238,724	31	Courtyard by Marriott Aguadilla	50,653
7	Atlantis The Palm Dubai	234,883	32	Pearl Continental Lahore	50,573
8	Ushuaïa Ibiza Beach Hotel (Official)	212,354	33	Mallorca Rocks	46,278
9	Sakura Hotel & Hostel in Tokyo Japan	197,343	34	Casa Andina Hotels	46,158
10	Resorts World Genting	179,008	35	The Peninsula Hong Kong	42,662
11	Planet Hollywood Resort & Casino	178,922	36	Danubius Hotels Group	41,446
12	Mazagan Beach Resort	176,212	37	Grand Sierra Resort and Casino	41,358
13	Vital Hotel Westfalen Therme	171,890	38	W Barcelona	40,535
14	Pearl Continental Karachi	169,475	39	Island Shangri-La Hong Kong	36,388
15	Palms Casino Resort	156,678	40	El Conquistador Resort	35,512
16	The Cosmopolitan of Las Vegas	151,413	41	W Hong Kong	31,839
17	Hard Rock Hotel and Casino Las Vegas	147,419	42	Montage Laguna Beach	30832
18	Horta da Moura	119,188	43	W Seoul Walkerhill	30,316
19	The Standard Miami	103,108	44	French Lick Resort	29,385
20	The Standard High Line	93,859	45	The Broadmoor	28,281
21	Pearl Continental Rawalpindi	92,815	46	IP Casino Resort Spa	26,890
22	Mayaguez Resort & Casino	72,043	47	Cove Haven Entertainment Resorts	25,710
23	Pousadas de Juventude	70,399	48	Big Cedar Lodge Official Page	24,978
24	Small Luxury Hotels of the World	69,254	49	Waldorf Astoria New York	24,929
25	Uematsuya Ryokan	63,155	50	AO Hostels	24,722

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