

2014

A Qualitative Study Of The Role Of Social Media In The Construction Industry

Ignatius Chukwu
North Carolina Agricultural and Technical State University

Follow this and additional works at: <https://digital.library.ncat.edu/theses>

Recommended Citation

Chukwu, Ignatius, "A Qualitative Study Of The Role Of Social Media In The Construction Industry" (2014). *Theses*. 193.
<https://digital.library.ncat.edu/theses/193>

This Thesis is brought to you for free and open access by the Electronic Theses and Dissertations at Aggie Digital Collections and Scholarship. It has been accepted for inclusion in Theses by an authorized administrator of Aggie Digital Collections and Scholarship. For more information, please contact iyanna@ncat.edu.

A Qualitative Study of the Role of Social Media in the Construction Industry

Ignatius Chukwu

North Carolina A&T State University

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Department: Built Environment

Major: Technology Management

Major Professor: Dr. Musibau Shofoluwe

Greensboro, North Carolina

2014

The Graduate School
North Carolina Agricultural and Technical State University

This is to certify that the Master's Thesis of

Ignatius Chukwu

has met the thesis requirements of
North Carolina Agriculture and Technical State University

Greensboro, North Carolina
2014

Approved by:

Dr. Musibau Shofoluwe
Major Professor

Dr. Frank Yeboah
Committee Member

Dr. Robert Pyle
Department Chair

Dr. Lewis Waller
Committee Member

Dr. Sanjiv Sarin
Dean, The Graduate School

© Copyright by
Ignatius Chukwu
2014

Biographical Sketch

Ignatius Chukwu was born on May 28, 1965, in Nigeria. He graduated from Government Technical College Awka, Anambra State Nigeria, in 1983 with a certificate in Bricklaying & Concreting. He was employed as a project supervisor at IG Builders & Designers Associates in 1983 after graduation. Later in 1998 he became the Supervisory Councilor for Works (County Commissioner for Works) in charge of Works & Transportation Department at Awgu Local Government, Enugu State Nigeria.

He relocated to the United States of America in the year of 2000 and began working for McGee Brothers Company from 2001 through 2005 before joining the City of Greensboro workforce where he currently serves as the Water Resources Department Officer Code Enforcement (FOG Coordinator). In 2007 he received his Associate Degree in Civil Engineering Technology (AAS) from Guilford Community Technical College (GTCC), and in 2012 he graduated with Bachelor of Science degree in Construction Management from NC A&T. Also Ignatius Chukwu is married with four wonderful children.

Dedication

I humbly dedicate this work to the affectionate memory of my late father Chief Anyanebechukwu Chukwu. In his lifetime he stuffed my lunch bag with persevering and dogged spirit before his home-calling by his creator in 2000. The seed he planted in me makes me strong in the face of adversities.

Acknowledgements

First and foremost, I wish to acknowledge the gracious works of God from the beginning to the end of this thesis project. By his grace I was privileged to have committed tripartite committee members who worked tirelessly to bring this thesis to a progressive halt.

Special thanks go to Dr. M. Shofoluwe, for his unwavering faith in my ability to accomplish this project. He was the pillar that propped me up when my knees buckled under pressure. Equally, my gratitude goes to Dr. F. Yeboah and Dr. L. Waller for their unalloyed support as committee members as well. Also, I am thankful to Dr. R. Pyle and Dr. C. Gloster for their wonderful support.

At work, I have a team of supporters, and I am grateful for their kind words of encouragements. Among them are my supervisor David Phlegar and Dr. S. Shree Collins who spent sleepless nights to critique and make useful recommendations for my study.

I cannot list all the names of all the people that contributed to the success of this thesis; however, it will be grossly incomplete if I did not express my unyielding gratitude towards my beloved wife, Elizabeth Chukwu and my four children; Winner, Favour, Promise, and Victor Chukwu. Behind the scene, they have prayed and endured some untold difficulties to make sure that this thesis was a success.

Table of Contents

List of Figures	viii
List of Tables	ix
Abstract	2
CHAPTER 1 Introduction.....	3
1.1 Significance of the Study.....	6
1.2 Purpose of the study.....	7
1.3 Problem statement	8
1.4 Objective of the study	10
1.5 Research Questions.....	10
1.6 Assumptions	11
1.7 Limitations.....	11
1.8 Definition of Terms	12
CHAPTER 2 Literature Review	14
2.1 Social Media: Tool to Connect and Engage Customers	20
2.2 Social Media: Tool to Overcoming Competitors’ Intimidation	26
2.3 Connecting across Employees Demographic Divide	30
2.3.1 Managing information-on-demand.....	33
2.3.2. The internal stakeholders.....	36
2.3.3 External stakeholders.....	38
2.3.4 Competitive advantage through social media text-mining.....	40
2.3.5 The challenges.	43
2.4 Corporate Impression & Image Management.....	49
2.4.1 Ethics.. ..	54

CHAPTER 3 Methodology.....	57
3.1 Research Design	58
3.2 Sample Group.....	62
3.3 Data Collection.....	63
3.4 Data Analysis.....	64
CHAPTER 4 Results.....	66
4.1 Biographical Information.....	66
4.2 Part Two – Research Questions.....	68
CHAPTER 5 Discussion and Future Research.....	84
5.1 Summary of the Study	84
5.2 Summary of Findings	85
5.3 Conclusions.....	91
5.4 Recommendations for Future Studies.....	94
References.....	96

List of Figures

Figure 1. Industries and their social media activities.....	15
Figure 2. Social media conversation as tool for creativity.....	17
Figure 3. National Benchmark survey on employees informal work socialization.....	33
Figure 4. Model of creativity through social media.....	93
Figure 5. Triangulation of study findings	94

List of Tables

Table 1 Summary of the biographical questions and responses	68
Table 2 Commonalities/coding of data.....	82
Table 3 Dissimilarities	83

Abstract

Social media conversational and digital technology has redefined the communication landscape between consumers and the providers of goods and services. It has created a conversational dual carriageway among all interest groups. Increasingly, organizations and corporations are participating in the social media conversation for some good reasons: to engage customers and to get business in creative ways.

The goal of this study was to assess the role of social media in the construction industry, considering that consumers are increasingly influenced by social media information. The limited documentation regarding the construction industry despite distribution cravings in current social media was the main driver of this study. The study started with a literature review covering the influence of social media on industries' business landscape with emphasis on construction industry. To acquire qualitative information, oral interviews were conducted. Participants were from four major construction companies operating in Southern to Midwestern states (Carolinas to Arizona and Hawaii) in the United States of America.

The results acknowledged industries' increased awareness of the influence of social media on the consumers. According to the study, industries that engaged their audiences on social media were banking on the optimism of social media audience, business, and information reach advantages and ability to build community of social network at affordable cost. Also, it was found that construction industry is not actively participating in the social media conversation like many other industries. Many actors in the industry decided to stay aloof because they believe that social media conversation is a double-edged sword and very dangerous.

Keywords: Social media; Twitter; Facebook; Text mining; Competitive intelligence; Business intelligence; Organization impression and image management; Bluebeam; Evernotes

CHAPTER 1

Introduction

The importance of communication and team collaboration in project, product, and service delivery cannot be over emphasized enough (Zhang & El-Diraby, 2012; El-Saboni, Aouad, & Sabouni 2009). Just as the thumb is very important and indispensable in making a sound finger snap, so is communication in a successful project execution and delivery. Stressing the importance of communication and information sharing in an organization, for instance, El-Saboni et al. (2009) argued that during all phases of project lifecycle that good communication is an important success factor that connects all the other factors of project success. Based on this, there is the need to study the role social media play in the construction industry to foster communication with its stakeholders and the general public. This study dealt with the role of social media and its influence on the overall project initiation, execution, and delivery.

The importance of corporate visibility and image building cannot be over emphasized in today's business world; hence organizations are fostering creation and maintenance of good communication with her audience. In the quest to create a healthy communication link with the target audience, organizations and firms engage and utilize the services of "bulletin boards". Industries and organization use these (bulletin boards) that they (users) strategically positioned on the highways to communicate their presence and announce their products and services to the general public (Kaplan & Haenlein, 2010). The bill/bulletin boards serve audiences that use those highways where the billboards were positioned. This method of communication, no matter how assumed to be effective has some notable deficiencies in reaching the target audience. One of the notable deficiencies of using bulletin boards is that it serves as one-way traffic message delivery system; hence the need to implement/adopt more audience-reaching method to satisfy

the intended organization strategy/goal. Users of the bulletin boards often announce what they want the public to hear without adequate provision for feedback from their audience (Kaplan & Haelein, 2010). This does not create a forum for engagement and conversation among interest groups. Industries and organizations also use billboards to improve their public social capita as noted by Elsbach, Sutton, and Principe (1998). The authors contended that industries and organizations use these billboards for press releases, annual reports, mass media publicity, to organize special social events for the following purposes:

- presenting themselves as a viable company;
- maintaining connection to the public (increase their social visibility);
- attracting investors;
- intimidating their competitors and
- increasing their social per capital.

The birth and use of social media and social media networking technology have solved the primary deficiency (one-way information dissemination) in the use of bulletin board as consumers yearn for social conversation. Therefore, the internet social media conversational (communication) technology was an offshoot of a bulletin board approach (Kaplan and Haelein, 2010). Social media and social networking technology have created a dual carriageway for interaction and informational sharing between the public, services and product providers (Korshun, & Du, 2012). According to Searls and Weinberger (2009), as cited by Laer, Ruyter, and Cox (2013), market environments are redefined and the actors are reacting to different communications attitudes to reach potential customers. Research shows that the market is becoming conversational through social media technology (Jacob, 2012).

The empowerment was the ability of customers to generate and post conversation on social media sites (Kaplan and Haenlein, 2010). The conversation could be about their past experiences dealing with a particular product of a company. In such case, the web-care department should respond appropriately. Some of these postings may expose some companies' integrity violation or otherwise (Lear, Ruyter, and Cox, 2013)

Individuals appreciated this technology because their voices were heard. Companies and organizations loved it because they did not need to relocate their bulletin boards from one highway to another in order to reach greater audiences. The use of bulletin board no matter how large and high it was designed has become ineffective and inefficient method of connecting and communicating to the greater world out there (Kaplan and Haelein, 2010).

Newer communication modes and social networking technology has significantly enhanced the way we think, interact connect, and share information with people across distinct cultures on a user-generated content basis (Hansen, Shneiderman, and Smith, 2011; Men and Tsai, 2012). Social media and social networking include texting messages, sharing photos, sending e-mails, socializing in visual chat-rooms, blogging, streaming video, using wikis, hosting discussion groups, viewing videos on YouTube, tweeting, and many more (Alexa, 2010; Kaplan and Haelein, 2010).

Globalization and the need to dismantle geographical communication barriers are the fuel that energized the patronizing-spirit of social media technology. It has also impacted the way companies process information and impress the general public (Scheiederjans, Cao, and Schneiderjans, 2012). The introduction and use of social media technology have permanently altered the traditional communication route between consumers, stakeholders, public and providers of goods and services (Jue, Marr, and Kassotakis, 2010; Avery et al. 2010; Qualman,

2009; Safko and Brake, 2009). The end of the trend continues to draw an all-inclusive-loop of social network (Kaplan and Haelein, 2009). The communication topographical terrain has also changed. The communication link between industries and the public is now even flatter than before as noted by Jue et al., (2010). The redesigned communication route is wider and operates as a dual carriageway of facilitating dialogue among all the stakeholders (Hansen, Schneiderman, and Smith, 2011; Men, Tsai, 2012).

1.1 Significance of the Study

This study is significant because current trend in the use of social media has such dynamics that it knows no generation, class, geographical area, or industrial boundaries (Huang, Baptista and Galliers, 2012; Kaplan & Heasein, 2009). Some previous researchers believed that the exponential proliferation trend of social media technology and the tendency to draw a delineated all-inclusive map is foreseeable in the near future. They also believe that newly re-drawn social media communication maps have also impacted organizations' internal organizational/policy structures.

Again, the annexation of companies and organizations by social media power has also forced companies and organizations to cave in to the audience's social media needs and requirements (Fournier and Avery, 2011). This newfound romance among consumers and companies /organizations fostered by social media is creating communication network that is neither top-to- bottom as before but bottom-to-top; exploiting and maximizing freedom of speech (Hansen et al., 2011; Jue et al., 2010). In an article titled "what's in a name?" as cited by Zyglidopoulos, Georgiadis, Carroll and Siegel (2012), the authors narrated the importance of media on shaping corporate social behavior. They suggested opinions that media (including social media) are not only vehicles for advertisement and mirrors of reality reflecting a firm's

actions, but are also agents of information, thus having the power to influence the opinions of stakeholders.

Social media has become an internet-based social communication megaphone, which customers are using to voice their opinions, approve or disapprove of services and goods that come their way (Laer et al., 2013; Ward and Ostrom, 2006). In addition, companies are equally using social media networking tools to dialogue, connect, and retain their customers and engage the entire public (Men and Tsai, 2012).

While social media was initially designed to facilitate the sharing of information, connecting society, cyber networking, and expressing freedom of opinion at minimal effort, time, and cost, organizations and companies are also taping the advantages it provides to advertise their product and services (Boyd and Ellison, 2008; Hanna, Rohm, Crittenden, 2011). The user-friendliness and minimal technological experience in using this technology has made it the peoples and organizations' favorite. Statistics showed that in 2012 about one billion people are using social network (Schniederjans and Cao, 2012). According to the findings, users of social media and social network are numbering about 1.43 billion, and are being projected that the number will increase in the near future (Arno, 2012).

1.2 Purpose of the Study

Based on the number of social media users, the trend is showing the triangulation and convergence of multitudes of consumers at the social media sites—Social media junction. Hence based on the above findings, social media sites are becoming an ideal place to advertise products and services by all interest groups (Jacob, 2012). Thus, the purpose of this study was to assess the role that social media play in the construction industry. This study focused on different stages of project delivery and assessed the role and/or influence of social media on project execution

and delivery. The awareness of the influence of social media could enable construction industries make economic decisions on whether to invest their resources and energy on its adoption. .

In essence, this study was conducted to investigate the role and influence of social media towards achieving the following project objectives:

- Use of social media at the design phase (pricing negotiating across trades)
- The role of social media in resolving project related crisis
- The role of using portable social media network on the site
- The role of social media in team/group project
- The role of social media in promoting innovation in the construction industry

It is expected that the result of the study would aid construction industry top executives in making sound economic decisions regarding adoption of social media towards achieving their organizational and project objectives.

1.3 Problem Statement

Because of construction industry's uniqueness such as continuous site re-location, ad hoc-project-team based, work place safety concerns, and patchy offices, the use and integration of social media pose a significant challenge. Hence there is the need to study how construction industry communicates in this social media age. Craig and Sommerville (2006) contended that within a construction company, strategic information sharing is one of the most important parts that influence successful project delivery. However, the industry is challenged with continuous site relocation problem. This problem may make it difficult to maintain onsite social media network or an intranet that connects all the internal stakeholders (Lotriet and Abrahames, 2012). Therefore, there is a challenge of having a feasible integration of effective social media and social networks into the construction operations, administrative, and organization's corporate-

stream management structures. Apart from multiple and patchy locations that construction industry is known for, the collaborative challenges of coordinating multiple agents and skills/trades involved in the project execution could be a difficult challenge. Hence, maintaining a common front and univocal stance on social media conversation is intrinsic to the success of the construction project and the perceived public image perception of a given company (Rezgui, 2007).

The complexities imposed by the inter-relational and dependency respect for all the participating independent organizations involved in the project execution have some limitations on what should be shared among the stakeholders and general public (Rowlinson and Croker, 2006). Despite the much talked about information sharing during project contract execution, little has been said about the format or type of media that the communication and information sharing should take. The need to conduct this study also emanated from the notion that construction industry is behind other industries in using conversational information technology (Nova Scotia Sector Council, 2010; Rowlinson and Croker, 2006).

It is also pertinent to note that considering the uniqueness of construction industry. There is therefore the need to study the use of social media technology in the industry with its multiple challenges and unique organizational trends. These trends include the industry's use of functional managers and project managers for project execution and delivery. Other trends and challenges include high employee turnover, generational and diversity divide, and relationship to other stakeholders that characterize the industry.

Despite all that have been written about the use of social media by companies and organizations, very little information is known or documented on how construction companies use social media technology to advance their mission and strategy. For this reason, there is a

need to beam the search light on how construction companies use social media in their project initiation, execution, and to collaborate among different participating firms and delivery of end product.

1.4 Objective of the Study

The objective of this qualitative and exploratory study was to assess the role of social media in the construction industry. Specifically, the study was conducted to investigate the influence that social media technology has on the overall day-to-day decision making processes in the construction industry. This study also focused on how construction companies use social media to collaborate—connect and engage their customers, and share information across all interest groups. Other areas of interest focused on how the industry interacts and relates with the public body regarding to their uniqueness in relations to the following areas:

- Constant project site relocation
- Difficulty in maintaining social media network or intranet system that is all-connecting to all internal and external stakeholders at all times
- Dealing with customer turnover (many of their customers are onetime customer in a lifetime)
- Bridging the internal generational divide in the industry
- Coordinating all independent skills and championing a common front in project execution and responding to social media posting

1.5 Research Questions

The following research questions were designed to guide the conduct of the study.

1. What is the role of social media in industrial organization?
2. How is social media used in grouped communications within the construction industry?

3. What is the role of social media in crises situations (during project execution)
4. How does construction industry adopt and incorporate mobile social network gadgets on the workplace during work hours?
5. What is the role of social media in the construction industry in reference to creative innovation and change?
6. Any social media and ethics concern in the construction industry?
7. How does the construction industry create social capita through social media?
8. Do social media impact construction industry performance index?
9. Do social media help in construction Knowledge Management?

1.6 Assumptions

The basic assumptions of this research were as follows:

1. That the research participants are knowledgeable in the industry and understand what is social media and social networking technology.
2. The study findings were generalized to represent the industry on this subject matter.
3. The responses to the questions were assumed to be valid correct based on the qualifications, experience and knowledge of the respondents.
4. This research assumed that the selected names of the construction companies listed on the Engineering News Records (ENR) for 2010 are true representative of the industry (Nova Scotia Construction Sector Council 2010; Zhang & El-Diraby, 2012; Elefant, 2011; Rowlinson, and Croker, 2006, p.154).

1.7 Limitations

To save time and financial resources, the researcher intended to limit the number of participants to manageable size and location within the feasible and attainable region.

- The interview was limited to experts in the construction industry that were listed in the Engineering News Record (ENR) for the year 2012.
- The study was limited to 5 subject matter experts from 4 construction companies.
- The face-to-face interview will involve companies that operate within close proximity to the state of North Carolina.
- The hallmark of the limitations of the study is its dependency on the responses provided by those interviewed.

1.8 Definition of Terms

1. **Construction Company:** A company that engages in the design, construction, building, remodeling, repairing or assembling of civil structure.
2. **Social media:** Social media refers to “many relatively inexpensive and widely used accessible electronic tools that enable everyone to publish and access information and collaborate on a common effort, or build relationships” (Jue et al., 2010, p. 4).
3. **Social network:** Web-based service that allows individuals to construct a public or semi-public profile, build and maintain connections, display their social connections to members (Boyd & Ellison, 2008).
4. **Web 2.0:** This is special kind of social technology tool “(a communication platform that makes connections possible), the phase of internet that allows everyone to create information online (Jue et al., 2010, p.5).
5. **Stakeholders:** Persons, groups, or organization that have vested interest or concern in a companies’ activities.
6. **Social per capita:** Perception of providing social services, maintaining positive public perceptions.

7. **Construction projects:** Building, assembling of infrastructure which is either unique in design, location and has cost constraint requiring constant monitoring and evaluation.
8. **Corporate identity:** Shared cognitive frame which is formed through the activity of an organization, through which the organization members and other stakeholders perceive and assess the organization, the environment and the position of the organization in the environment (Biloslavo, 2006, p. 112 as cited by Biloslavo, and Trnavčević, 2009)
9. **Evernote:** This a software application designed for managing information. It is used for collecting and finding information; just information management on the go.

CHAPTER 2

Literature Review

Despite the contributions of construction industry to humanity's day-to-day existence and the role the industry plays in the world economy, one would likely assume that the industry would be engaging applicable or implementable technological advancement to enhance their products and services. This consideration and assumption are in line with the large number of employment workforce and amount of money involved in the industry. With all these said, it is still the belief of many that the industry is lagging behind other industries in the use and application of some technological advanced communicating tools like social media technology (Nova Scotia Construction Sector Council 2010; Zhang and El-Diraby, 2012; Elefant, 2011; Rowlinson, and Croker, 2006).

In another documented paper on the ENR website titled Social Media Risks and Rewards in Construction the author stated that:

The Society for Marketing Professional Services in an August 2011 white paper called "The client's use of social media and social networking," authors Holly Bolton, director of marketing for CE Solutions; Adam Kilbourne, director of marketing for Tec Inc. Engineering and Design; and Dana Galvin, communications director for construction firm Barton Malow, sought the opinions of more than 1,600 members and received 160 completed responses. They found social media is being used by only 36 percent of engineering firms, 24 percent of architecture companies and 17 percent of construction and landscape design offices. (Erin, 2011, para. 12).

The above finding also lays credence to the following chart which was developed by Hubspot and referenced by US Small Business Administration on their website (Smallbiztrends,

2010). Hubspot after investigating 33 industries and how each fare on using different types of social media concluded that construction industry was 27th out of 33 industries investigated.

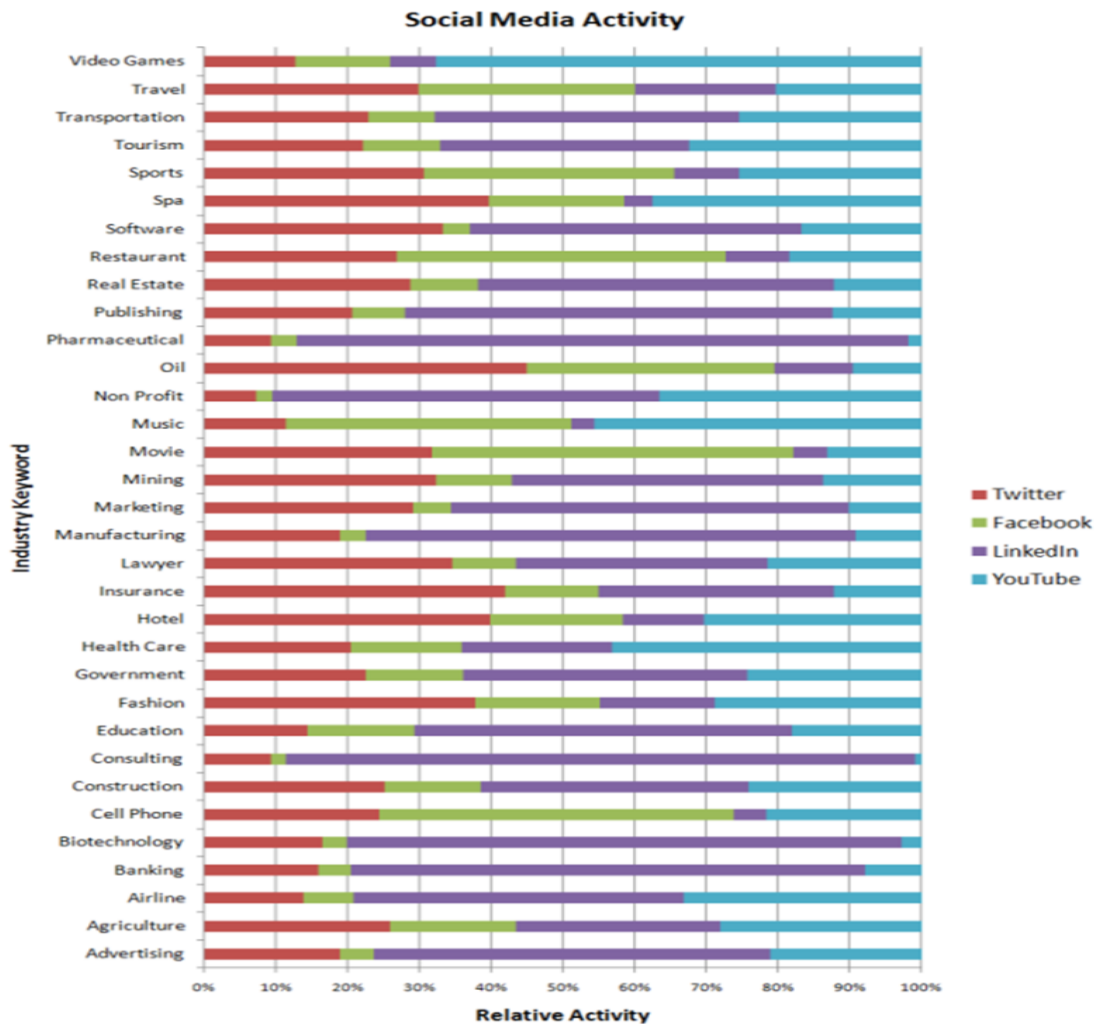


Figure 1. Industries and their social media activities (Smallbiztrends, 2010).

An astonishing fact found in a literary review was that there are few documented information on how construction industry uses social media for engagement of their stakeholders, customers, the general public and project delivery. Considering the increased involvement and minutiae of technology in today's ever-changing world and that of construction industry in particular, it would also be assumed fairly to think that the industry should apply

every available, cheap, and easy to use technological communication advancement to sell their products and services to the public (Zhang and El-Diraby, 2011).

Based on the above assumptions, the literature review used a wide-angle lens to capture how other companies are influenced by social media and concurrently paying particular attention to how social media influence the construction or otherwise. Another reason for this all-encompassing review was due to scanty of documented materials that addressed the peculiarity and specificity of the construction industry in the use of social media. The review centers on the traditional method of connection and engagement before the advent of social media, showcase of brand name (staving off competitors' cyber intimidations), responding to public concerns, impression/image management and ethics.

In a study conducted by Zhang and El-Diraby (2012) to assess how efficient different industries had been from 1964 to year 2000, it was found that most industries' efficiency level had doubled since then. The research concluded that the construction industry was the only area that did not double in its efficiency within the time in review. From the research found, it was noted that those other industries which had doubled their efficiency over the period in review had used and applied applicable technological advancement in their operations in one form or another. The study also showed that industries that had performed efficiently were those that embraced social media with open arm as shown by the following model in Figure 2 below. This Model was developed by Mike Gotta Senior Technology Marketing Manager for Enterprise Social Software at Cisco.

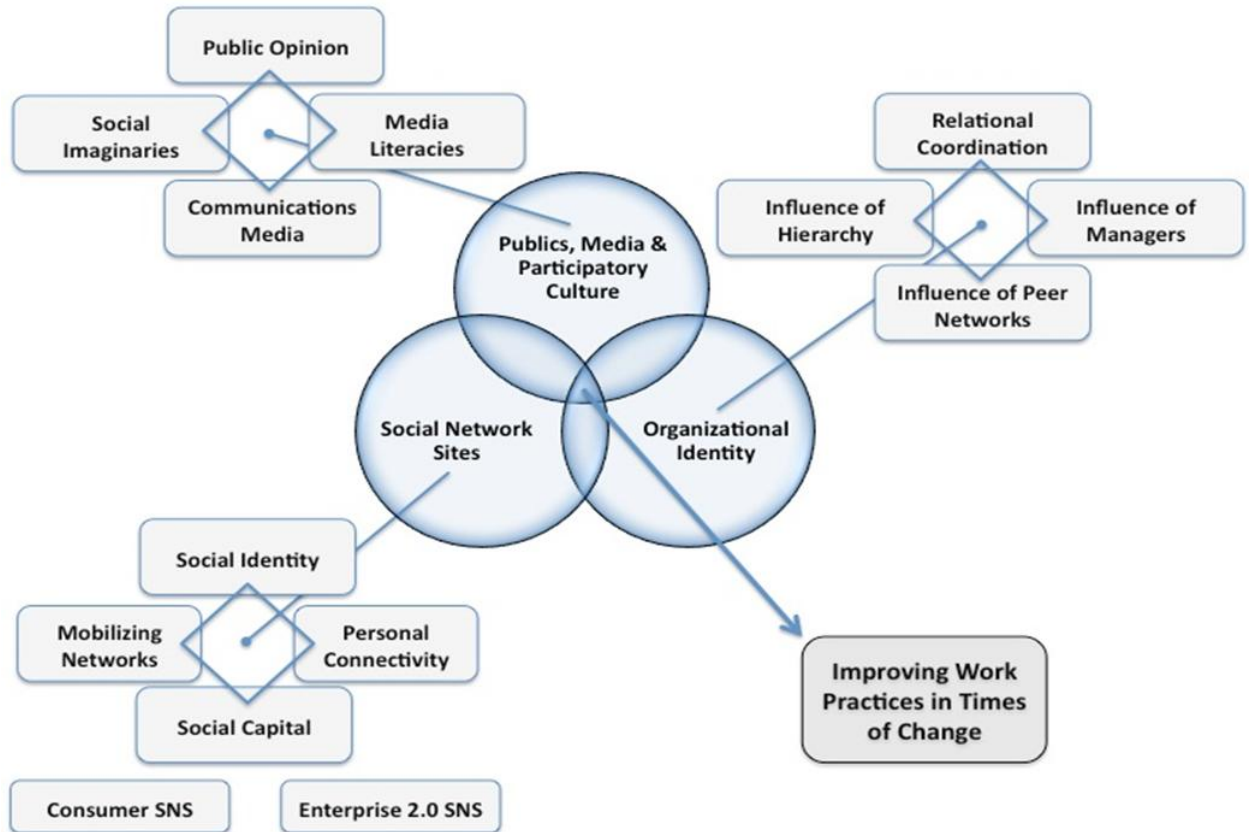


Figure 2. Social media conversation as tool for creativity (Name, Accessed from URL: <http://mikeg.typepad.com>).

Based on this research, it could be fair to suggest or think that social media technology might have been contributory to performance of those industries. This was why the study's searchlight was beamed into finding if there was a correlation between an industry's efficiency performance index and social media technology application. Many researchers agreed that social media technology is important to industries for information sharing, engaging interest groups and connecting with people with similar minds. They share the same idea that all social media do not have the same capabilities. LinkedIn, according to researchers is a social media website that has the capability of linking professionals with like minds from different industries to share knowledge and solve problems (Zyglidopoulos, et al., 2012; Men and Tsai, 2011; Pauley et

al.,n.d.). Despite the perceived communication and engagement advantages that social media have to offer to industries, researchers in this area have not all agreed that industries should use social media to advertise products and services. This disagreement stems from the idea that industries and organizations are not human beings and as such should have their own platform for communication, engagement, and to advertise their products and services (Fournier & Avery, 2011). Those on this side of the isles who disagreed with branding on the social media argue that brands are not invited on the social media. They call them “uninvited crashers” of social media (Fournier and Avery, 2011). Fournier and Avery (2011) believe that social media should be known as the “peoples’ web” or peoples media where people are brought together and not for advertising of product and services (section, para. 7).

Some of those who had concerns about social media branding were not comfortable by what they perceived to be the behavior of some organizations or firms that concentrate their efforts on products and services advertisement only. Propping support to the opinion of this side of the argument, Richard Dennison, senior manager of social media at British Telecom said that, “Social media is about participation” (Jue et al., 2010, p. 4). According to him this participation could be just in the form of viewing information, communicating or collaborating with anyone, anywhere, anytime (Jue et al., 2010).

It seems that some consumers would like to see companies change their lack of engagement and conversation on the social media as they display their goods and services. According to Hanna, et al. (2011), marketing is not only about capturing attention through reach, but it incorporates engagements of all the interested parties. In his article titled “How to Become a Social Media Superstar” the writer quoted Alan K’necht; a social media guru and author, as saying that “the topic of conversation is the glue that draws people together in the social media

and not the advertisement” (Jacob, 2012, para. 5). The irony about social media branding according to K’necht is that many of the companies that use social media for branding are “devoid of conversation” (para. 6). In support to the above, Levine, Locke, and Weinberger listened to consumers and concluded that the following are the grouse of consumers regarding social media branding:

Conversations are the “products” the new markets are “marketing” to one another constantly online.By comparison, corporate messaging is pathetic. It is not funny. It is not interesting. It does not know who are, or care. It only wants us to buy. If we wanted more of that, we would turn on the tube. But we do not and we would not. We are too busy. We are too wrapped up in some fascinating conversation. Engagement in these open free-wheeling marketplace exchanges is not optional. It is a prerequisite to having a future. Silence is fatal (2001, p. 87 as cited by Hanna, Rohm, & Crittenden, 2011, section 3, para. 3)

There are others researchers who are asking industries, firms, and organizations to rise up and take the advertising advantages that social media have to offer almost free of charge. These groups are cheering for social media branding based on the enormous business reach advantage inherent in these virtual communities. Among those cheering for social media branding are Kaplan and Haenlein (2010). They are urging companies and organizations to act and lay sage on social media if they are to survive financially. They believe that branding on social media has some economic advantages.

Despite these counterviews on branding on the social media, International Business Machine Company (IBM) has estimated that more companies and organizations are constantly using social media to advertise their products and services, communicate with their customers

and prospective customers and current clients (Schniederjans et al., 2012). However, the divergent views held by different camps on this topic are ongoing and it appears that neither side is letting down their guard as social media is continuously becoming larger and bigger virtual community every day, attracting millions of active users (Lang, 2010).

2.1 Social Media: Tool to Connect and Engage Customers

According to this review social media interactive technology is for engagement, willful expression and exchange of ideas, and opinions on a limitless time basis (24/7) (Crittenden et al., 2011, Para. 7; Jue et al., 2010). This dramatic and dynamic shift from traditional method of business audience reach is of intrinsic value to companies' future and existence in this social media age. Some customer-focused companies have capitalized on social media conversation advantage to connect with consumers in order to bring their products and services to limelight. Some writers argue that companies that are not paying particular attention to this dynamic change and shift in paradigm or are intimidated or scared of talking into this loud social megaphone may end up playing a catch-up game or left in the wander land of social obscurity and non-existence (Pauley, Patel, and Mohamud, n.d.).

Some other group of researchers contended that organization's participation on the social media is not just for social interaction and fellowship, but it is an investment in social network (Schau, Muniz, & Amould, 2009, as cited by Korschun & Du, 2012). They believe that the collective actions of the entire participations on social network generate values for the participants (He, Zha, and Li, 2013). According to them, one of the values is stakeholders' identification value. This identification value is the stakeholders' interest to be co-creators of products and services. The writers argued that the need is satisfied when the stakeholders are listened to as co-creator of corporate programs and products. Some business experts believe that

if one is not participating in the social media, the person is not part of the cyberspace any more. Those experts contended that social media allow firms to engage product end-user in a timely manner at higher efficiency and at notably low cost (Kaplan and Haelein, 2010).

As discussed earlier, social media has empowered users to connect, engage, interact, and build a social community among themselves that knows no geographical boundary. This empowerment has its challenges and advantages. Some of the challenge to organization is conversation content control. This conversational content control challenge is sequel to the idea that organizations and companies are not the sole originators of topics of discussion. Some researchers believe that consumers are concurrently originators and receivers of information in the marketplace because of social media interactive digital technology (Hanna, Rohm, and Crittenden, 2011). Others have also argued that the interactive digital technology has made corporate management to be participants like others on the social media conversation and not the moderators of topics of discussion anymore (Kaplan and Haelein, 2010; Hanna, et al., 2011). According to them any participant can originate or contribute to topic of discussion that interests him/her (Kaplan and Haelein, 2010; Hanna, et al., 2011). Topics could be in the form of question, comment, vouching of disapproval of product or service, promotion or disagreement of ideology or disagreement to a prevailing status quo and so forth.

Studies have also shown that the original corporate business marketing strategy was to be in the prescriptive message dissemination position, not necessarily to engage the public in conversation as part of their impression management (Kaplan and Haelein, 2010; Piwinger and Ebert, 2001). Corporate organizations chose the prescriptive message dissemination they (corporate organization) wanted to decide the tone of the message in one-way direction without feedback from the public and consumers. Hanna, et al. (2011) believes that corporate

organizations do not want to engage consumers in a conversation because they (corporate organizations) believe that engaging consumers is dangerous and risky. Social media has not only reversed that marketing strategy but have also empowered consumers to engage companies or organizations in conversation about their products and services.

This new trend of consumer engagement as good as it sounds, researchers believe it is challenging to corporate managers. The challenges are the ability to control information flow and guard and monitor conversation contents. Abilities to monitor conversation content is critical to avoid the consequences of what the public might see as intentional falsification of figures or data over a product or services they provide. Based on this some writers warn that any information about product and services posted on the social media will be tried by the fire of public criticisms (Pauley, Patel, and Mohamud, n.d). The authors contended that virtual community visitors; experts in the field and others alike will critique all postings and if found wanting, that some consumers might cast their venom on the organization for what they (customers) perceived to be misrepresentation, misleading information or falsification of data.

Again, it was the view of some writers that sometimes some consumers' comments on a particular topic may not be seasoned with salt, or consumer might fail to cut companies any slack on presumed misinformation or misrepresentation of data. According to the researchers a situation like the above calls for caution as one tries to respond to consumers critique/comments. The procedure adopted in handling aggrieved customer or ill-informed audience's concern on the social media must be professionally done. The corporate representative should not deign to war of words with the consumer which might backfire on the company's image and public perception. That is why a knowledgeable, well informed, and seasoned professional should be assigned to monitor and respond to social media posting (Nova Scotia Construction Sector

Council 2010). A well-informed and educative response will channel more customer traffic towards the company or organization if done professionally; otherwise, reverse will be the case and customers will be rerouted away from the company as noted by some writers (Pauley, & et al. n.d). These writers believe that more traffic into the company's web site means increased visibility to consumers and public. Additionally, the ability of the website to turn these visitors into prospective customers increases the organizations' "lead generation" (Pauley, and et al. n.d. p. 10). Regrettably, the vice president of marketing and business development at 360 Construction, a building firm, Daryl Andrews noted that construction companies are not tapping the advantages of social media. He said that to construction companies, "It's more like a modern day press release tool for them still" (Erin, 2011, para. 7). He also noted that top 10 firms in the ENR's 200 contractors he investigated do not have social media presence.

Customer-centered company or organization can use social media conversation to create social connection and bond with their current customers (Jacob, 2012). He, et al. (2013) argued that consumer-focused organization should not only be satisfied with bonding and sustaining a positive relationship with their current customers. It was the view of these researchers that consumer-focused and creative organization can initiate and implement an all-inclusive dragnet to rope in their current customers, current customers' friends and families.

In the social media environment according to Farrel & Rabin (1996), consumers are apt to connect more often with employees not management position (low ranked employees) than a company's official spokesperson. This is because consumers downplay statements from a company's official spokesperson about any product or corporate image. Consumers consider their statement as "cheap talk" (as cited by Laer et al., 2013). The dilemma here is how to

discourage unauthorized individuals from acting as the mouthpiece of an organization on the social media site/s without stepping on individual freedom of speech.

Another ongoing phenomenon on the social media network is fractionalization and structural of regular equivalence due to conversational interaction and connections among participating consumers. This new found social media network and conversational technology has created and encouraged the spirit of “we and them” among consumers and service providers. This “we and them” attitude is buffering and alienating providers of goods and services from interfering with the consumers’ tones of influential conversation that is ongoing daily. These conversational connections are also creating an atmosphere of comradeship and Esprit De Corps among consumers. Consumers trust fellow consumers more than they trust a service provider, a result of constant conversation among them. According some researchers the Metcalfe’s law is applicable to the value generated through social media conversation. They believe that, “the value of social network increases in proportion with the square of its connection” (Antonio, Frank, and Harry, 2013, para. 8; Hanna et al., 2011, section 3, spheres of influence, para. 1). These researchers contended that organizations generate the same value when they engage in meaningful social media consumer- network conversations. This argument was supported by findings from other researchers. In a research conducted by Hanna, Rohm, & Crittenden, they found that there is social media has created connectivity among consumers and that organizations and companies are mindful and want to be part of it (Hanna et al., 2011).

As companies and organizations are using social media to create and magnify a positive image of their company, they have to engage their targeted audience carefully for the utmost benefits; otherwise it will backfire on the corporate image perception and financial performance (Jue et al., 2010; Men & Tsai, 2012; Utz, 2009). As stated above corporate organizations are

becoming very careful in social media conversation and responses because every posted comment will be tried and scrutinized by the public, a little misrepresentation might be very costly on the company's bottom-line. Therefore, to be on the safe side it was the opinion of some writers that a company or organization's representative should concentrate on the area of his/her expertise on the social media conversation (Pauley, et al., n.d.; Willard, 2011). These writers believe that when consumers get the answers to their concern through these conversations, that the consumer will have trust on the company, which will overtime create relationship and bond between the consumers and the organization.

The uniqueness of construction industry and their targeted audience has being the reason that special consideration is given to it by some writers. Willard (2011) of Riggins Construction & Management Inc. strongly believed that construction industry should get involved in the Twitter as a social media marketing tool. She outlined some tactics that construction companies are using to promote their profile on the digital media. They include having social media icons on website, links in email signature, printed materials, vehicle marking, and attending local "Tweet-Up." However, her measure of success is in the number of people that she met and number that follows her tweets; no dollar value.

Another suggestion for the construction industry is to use blog to reach her customers and potential customers. It was suggested that construction marketer can use blogging successfully to connect, engage, and educate their audience to meet business objectives and enhance marketing brand (Pauley, petal, and Mohamud, n.d.). The authors however, believe that blogging should be incorporated with other methods that are available on the web to add value to their audience. They encouraged construction industry reps to use blog to educate their audience on any impending legislation that will impact their lives, also to engage the press.

2.2 Social Media: Tool to Overcoming Competitors' Intimidation

Business intimidation is any method with which a strong organization asserts its business power to be perceived as having the power and willingness to be demonstrated over a weaker business opponent (Amin, William, and Joseph, 1999). The marketplace, no matter what type, is full of competition and challenges (Willard, 2011). The challenge is the ability to convince consumers that a particular product or service has an added advantage over others from other competitors (Zyglidopoulos et al. 2012). Traditionally, companies and organizations have used different methods to present themselves as better than their perceived competitors. As noted above one of the most effective methods is casting a shadow over ones' competitors to obscure them from the consumers (Mohammed, Gardner, and Paolillo, 1999). Therefore, the primary purpose of using bulletin boards or social media is to create public visibility and attention (Zyglidopoulos et al. 2012). It was noted that business competitions' rivalries are not expected to evaporate because competition is part of the industry and life; it is unavoidable (Willard, 2011).

Financially stronger and larger companies' exploit this assumption to obscure small companies into nonexistent through what experts called intimidation and exemplification methods (Mohammed, Gardner, and Paolillo, 1999; Schniederjans, Cao, and Schniederjans, 2012). The same is applicable to advertisements posted on magazines and daily newspapers. The cost of advertising on the outer pages of magazines or newspapers cost more because it is assumed that consumers can see these outer pages without reading the entire magazine or newspaper.

As stated above there was a time when billboards on major roads and highways were looked at as the optimum option for information dissemination to the public. During that time, companies that have stronger financial muscle would try to use multiple billboards at the most

convenient, visible and strategic locations to announce their existence, product and service. This they do to overshadow their competitors/opponents in the industry (Kaplan and Meanlein, 2010). Large and financially buoyant companies and organizations in the scenario above can afford to pay the required expenses on a constant basis to relocate their billboard, while small and medium size companies might not be able to do this on a steady and long time basis. New or smaller companies also may not be able to analyze the ever-changing business demographic market in order to determine where to locate or position the billboard for utmost result.

Additionally, studies indicate consumers are also relocating from physical or spatial addresses to new address; many customers live online. Not only do social media have the ability to reach customers and prospective ones at their new location, they also have the tendency to locate consumers that live online. Locating consumers that live online becomes a primary reach advantage of using social media to advertise product and services (Hanna, Rohm, and Crittenden, 2011). With social media technology, industries and organizations are not in need of constantly relocating their information broadcasted on billboards. They also do not have to analyze demographic changes from one location to another because consumers have moved to virtual options. Another researcher suggested that maintaining a social media presence is necessary to getting consumers attention online (Elefant, 2011). Contact information from companies and organizations are sent straight to consumers' social media (virtual community) address. This is because social media technology has designed and constructed an expressway route to every consumer's doorstep via internet connection, according to Amin, William, and Joseph (1999).

The empowering ability of social media technology also has created fairly equal level playing ground for large and small/new companies to reach consumers. When internet commercialization initially started, companies engaged in what researchers called

“overshadowed marketing strategy” (Anderson and Wolff, 2010). According to these researchers, at that time large and financially powerful companies would try to create from every topic posted online a link that would reroute visitors/consumers to their company website or product information. The rerouting of consumers from whatever online website they visited to the company’s website is still practiced today. However, social media technology has fairly leveraged every one’s ability to do the same at the least cost possible as noted by Anderson and Wolff (2010). What makes the difference now and then is that with social media’s leveraging ability, both new and small companies can make their information to appear on Google or on any popular search engine first page just by creating and loading video clips of their products and services online (Pauley, et al., n.d.). Hence, small companies have the ability to be visible online just by having videos of their activities/products online. Pauley, et al. (n.d.) further stated that videos clips posted online via social media have the tendency to be picked by popular search engine 50 times more than the best written script by any know expert.

For corporations to monitor and respond to social media conversation effectively on a daily basis it takes some financial clout to hire employees, which is why some larger companies tend to monopolize the social media airwave. However, a small creative organization that is customer-focused and equipped with tools for creating video clips can cast a shadow of invisible blanket on the on richer and bigger company if creatively implemented. The chairperson and CEO of the Marriott International Hotel chain was quoted as saying that “There’s no need to spend \$100,000 to design the perfect Myspace presence, or hire a professional writer to manage your corporate blog” (Kaplan and Haelein, 2010, section 4.2.4 para. 1). This statement goes a long way to show how far social media digital technology has leveraged creating the cyber visibility among corporate organizations (Kaplan and Haelein, 2010). With social media

anybody knowledgeable in the company's products and services can post and respond to other posts that concern their company or their product and services. These responders are called brand community as noted by some researchers (Pauley et al., N.d.; Larche, Habibi, and Richard, 2012).

It is very interesting that participating on the social media virtual community offers small companies a privilege to stave off every intimidation from large companies. Some researchers also see social media site as a site where any corporation that felt intimidated by her competitors can take their case to the public for adjudication against their competitors' emissaries. If a larger company tries to demonstrate their power and assertiveness (intimidate) contrary to normal business norms with intent to intimidate small company, the affected company can take their case to the social media virtual community (Amin, William, and Joseph, 1999). This is because corporate organizations will not allow their dirty linen to be washed in the public for fear that any negative impression created via social media will affect their bottom-line (Amin, William, and Joseph, 1999).

Online spying has become a common practice among various corporations of all sizes. Because this practice is not illegal, some social media experts believe that companies should from time to time sniff around on their competitor's website to see their method of advertising and connecting with their audience in addition to the information on the social media websites. In his blog, an active actor in the construction industry said that failure of a company to monitor the contents and activities/conversations in the social media is like committing "corporate suicide" (Maddock, 2010). The same case was made by Levine, Locke, Searle, and Weinberger, (2001, p. 87), that, "Engagement in these open free-wheel marketplace exchanges isn't optional (as cited by Hanna, ROHM, and Crittenden, 2011). It's a prerequisite to having a future. Silence

is “fatal” they said. Descending heavily on those who do not want to participate on social media, another researcher said that, abstaining is not only “effort in futility”, but also counterproductive because the organization will miss the opportunity of building relationship and trust with her customers; adding that social media is not going away soon (Elefant, 2011, sect. 3, para. 1).

2.3 Connecting Across Employees Demographic Divide

According to the research done by JWT Corporation (James Walter Thompson _ advertising agency), Lee Hech Harrison and others confirmed that there is a social divide among workers in a workplace environment regarding their individual social media needs (Howe and Nadler, 2012). As corporate management encourages and plans to have a synergy of workforce/team for the success of the organization, it might be necessary to look at how stakeholders are managed across the supply-chain in the current social media information technology age. Considering the role played by stakeholders in the successful project execution and delivery, connecting across diverse age groups and cultures is very important to the success of the industry. Eastman, et al. (2008) also affirms that construction projects require multiples skills and associates, subcontractors, and suppliers to successfully deliver the project on time and to the taste of the client as agreed in the contract. Across these teams of associates and multiple skills lies the inherent demographic communication challenge. This kind of challenge has to be treated carefully and effectively to avoid any form of derailment in the project execution and delivery. Effective communication and engagement with diverse groups and teams are the links that will bridge the gulf created by demographic work environment, cultural diversity changes in the construction industry. Corporate management’s ability to identify and provide the employees’ social needs that directly or indirectly influence and shape work environment attitudes and behaviors are a plus for the organization success. These generational social needs

are unique to each demographic group and not one-size that fits all as noted by Training Daily Advisor (2013, issue of February 15).

Social communication needs in the work environment differs according to the existing generational characteristics of the workforce in a company or organization. According to Training Daily Advisor issue of February 15, 2013, each generation values certain things from their employer, and how well the values and needs are met goes a long way to contribute to the employees' job satisfaction and workforce synergy.

Among the generational demographic needs is the need to socialize informally at work. Previous studies conducted on social media information needs of employees at workplace show that social media information needs are on the top of the needs of millennial generation in the workplace. They are followed by generation Xers, and Baby Boomers come last as was noted by the Training Daily Advisor issue of February 2013. The same finding shows that Baby Boomers prefer the traditional method of information dissemination in the workplace.

Also according to a publication presented by Lifecourse Association, titled "Why Generations Matter," it was the opinion of the paper that millennial generation crave for social media information networking because they (millennial generation) had previous engagement using social media growing up as children, participating in different games, and social clubs in the school. The author argued that they have adopted instant messaging and digital mobile technology before getting into the workplace, and any effort to discourage that will not go too well with them. Based on this, millennial generation wants to have constant collaboration with their bosses and colleagues, want to connect informally, and develop real friendship as noted by the author of the paper (Why Generation Matter, n.d). This same group has their social

communication network gadgets attached to their soul, body and mind, while the less-information-savvy (Baby Boomer) does not see it that way.

To retain top young talents in the workforce, corporate management has to know that participating in the virtual community is a need paramount in the life of millennial generation employees. And that need has to be met if they should have job satisfaction socially. The White Paper concluded by citing examples of companies like Google, which allows and encourages employees to socialize informally during work hour. The paper contended that allowing employees to connect with each other socially increases productivity, creates bond and teamwork in the workplace. It is also the view of some researchers that every corporation should incorporate social media into their organizations to improve performance, build highly energized teams, and positive culture (Jue et al., 2010).

The more internet savvy millennial X (Xers) want to use the social media but generation Y (Yers) want their organization to use the social media to communicate and engage each other (Jue et al., 2010). Based on this it was the opinion of some researchers that no group should be left out; conversation and engagement have to be designed to accommodate each group to avoid imbalance in the information dissemination and needs. Figure 1 displays the number of employees that wanted to socialize informally at work, based on the survey conducted by National Benchmark (2011). The author of the study noted that percentages may have gone up as younger people entering into the workforce increases.

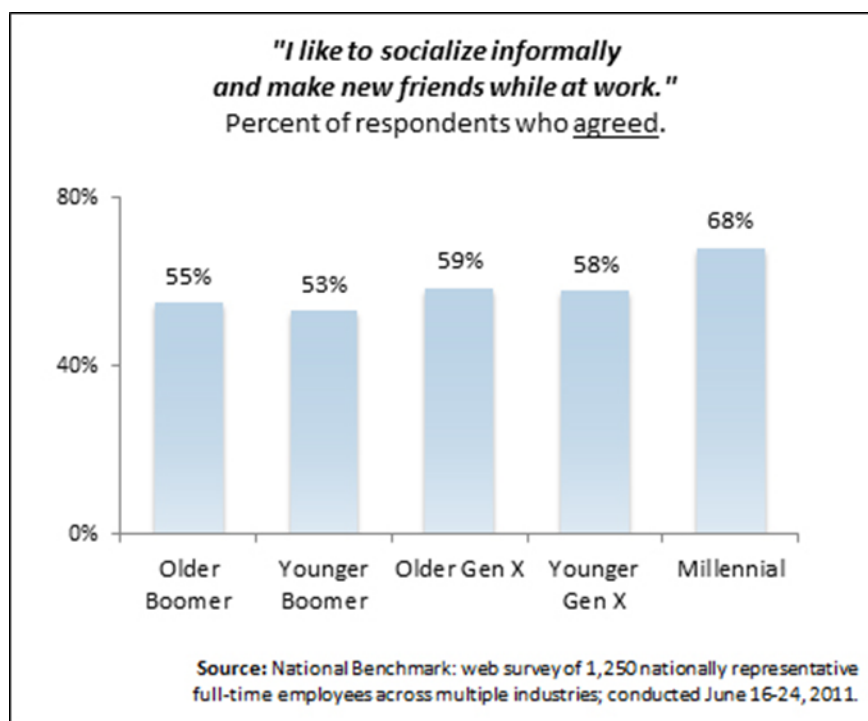


Figure 3. National Benchmark survey on employees informal work socialization.

Findings showed that some corporate managers who disagree with participating on the virtual community at work cite some concerns. Some of the concerns they cited included jobsite safety, work commitment, productivity and fear of spilling the bean out there.

2.3.1 Managing information-on-demand. The current information-on-demand-age has fueled the exponential evolution of social media and social network. This new spark in the plethora of social media has put the consumer behind the steering wheel (Hanna, Rohm, and Crittenden, 2011). Consumers are dictating the tune of the piper; what products and services they need (Berthon, McCarthy, and Kates, 2007; Garretson, 2008). The social landscape change also affected how consumers and service/goods providers relate to one another (Laer et al., 2013). Because of this ongoing conversational engagement on the social media between consumers and goods and services providers, consumers indirectly or directly influence the way goods and services are designed and produced. Some researchers describe it a new phenomenon that the

companies and organizations need to tap into. According to Jue et al., (2010), “converging in a virtual community has metamorphosed into a new reality and phenomenon that has to be harnessed and appreciated by the stakeholders” (p. 2). Many other writers and individuals joined Jue and his team of authors to enumerate the attractiveness of social media information technology. For example, Thackeray and his team were of the opinion that the unique empowering ability to freely originate and respond to postings on social media and social network has made it very attractive to the general public, organizations and companies alike (Thackeray et al., 2008). This user generated content has its own challenges which some companies are not yet ready for according to some researchers. One of the challenges according to findings is that social media conversation is not in turn with traditional way companies communicate to the public in the past. The traditional way of communication allows companies and organizations to control and moderate what they want the public to hear and how it has to be presented (Kaplan & Haelein, 2010; Piwinger and Ebert, 2001). Today communication pendulum is swinging on both sides of the system (consumers and service provider). Some writers believe that social media, when it comes to conversation, have relegated organizations to the sideline. And as such, organizations are not comfortable that consumers are holding the social media conversational steering wheels; thus turning conversational steering to any direction of their choice (Kaplan and Haenlein, 2010; Michel, Mohammad, and Marie-Odile, 2013; Linjuan, and Wan-Hsiu, 2011; Hanna, Rohm, & Crittenden, 2011).

Some companies and organizations are on the sideline as social media onlookers, and some are not interested as a corporate entity simply because they prefer not to officially get involved in social media (virtual community) conversations and engagements. They reasoned that the benefits of getting involved do not justify the huge investments (time, energy, and

human resources) required to be actively involved. Author Jason Falls supported this side of argument and he "says engineering and construction firms are not alone in wanting to first know the value proposition of using social media—as well as the risks—before they launch into these platforms" (Erin, 2011, sect., Before You Social, Know What You Want, para. 1). They reasoned that construction companies' clients do not make decision based on social media conversation. This assertion was supported by documentation of white paper titled "The Client's Use of Social Media and Social Networking." as was documented on Engineering News-Record. The white paper stated that, "Many of our AEC clients are not using social media in the decision making for construction-related projects, but rather as a communications and PR tool," (Erin, 2011, para 12). Others are worried by the fear of jumping into the unknown world of social media. The latter is probably the reason why construction industry is sparingly involved in social media conversation (Willard, 2013). However, some writers believe that abstaining is not a viable option because there is much to gain than to lose. They advised that as one gets involved in the social media conversation he/she gets connected with people of like mind and build relationships, which will fuel the person to announce his/her presence and products (Willard, 2011). Benefits of social media engagement include increased organizational learning, enhanced change readiness, and stronger relationships. Also getting involved is not only exploring with like minds and knowing people but also seeing and learning what others are doing, and adding your own insight (Jue et al. 2010). Maddock (2010) argued that not participating in social media is like committing corporate suicide.

To increase competitive advantage and effectively assess the competitive horizon of the business world every organization should be involved in social media conversation. Involvement will offer the organization free insight on what the consumer is thinking about goods and

services generally and more importantly to feel the heartbeat of other competing firms and organizations in the same industry (He, Zha, and Li, 2013).

2.3.2 The internal stakeholders. In the construction industry the two primary stakeholders actively involved in project delivery are the internal and external stakeholders. They include employees and corporate management, subcontractors, and other partners. Managing and sharing information in the social media age is unique and entirely different from what was obtainable prior to the current conversational information technology age.

Employees' conversations on the social media network are directly or indirectly affecting product design and marketing decision. However, prior the social media information technology age, employees did not have a free forum to chat and converse amongst themselves (Jue, et al., 2010). Through the use of social media and social network employees are daily involved in product and process innovation by sharing information on any difficulty situation they encountered at work and how they devised a smooth method of solving the difficulty. This might be why corporate organizations are creating internal social media or social network in the form of forum, chatroom, or discussion board (Korschun and Du, 2012). The advantages of these forms of internal networking are numerous as noted by some researchers (Korschun and Du, 2012; Tom, Ko, & David 2013; Jimmy, Joao, & Robert, 2012). Employees can ask questions; respond to upper management information-seeking questions without intimidations. Other benefits of having internal social media are; effective time management (reduces employees and management meeting time, topics of discussion can be posted on the chatroom prior to the meeting). It also allows introvert employees to voice their concern which they may not have done in a formal meeting setting (Jue, et al., 2010). Jue, et al. (2010) also agreed that social media could be used for information gathering and sharing among employees.

Sequel to the perceived benefits of social media engagement, some corporate organizations are encouraging their employees to have a personal profile in the company's internal social media network where they could share critical information like special skills learnt within and outside the work environment, general experience (social and work), internal performance review, successes, praises, and concerns. This according to Jue, et al. (2010, p. 2) would foster shorter product and service development cycle and flatter organizational communication structure at an unimaginable speed.

In light of the mentioned corporate benefits listed above, and looking at the construction industry's uniqueness, it would be necessary to find out how this may play out in the construction industry. Some of the factors that make the industry unique are spatial and segmented nature of the project, projects interdependency and collaboration across multiple organizations, site relocation, structuring construction project into phases resulting in multiples of technical and organizational interdependences (Rowlinson & Croker, 2006; Rezgui, 2007a).

The aforementioned uniqueness of the construction industry has made the integration, adoption, and use of social media and social network into the operational, administrative and corporate stream of management structure a herculean task (Eckhard et al., 2009; Bowden, Dorr, Thorpe, & Anumba, 2006, as cited by Abrahamse, & Lotriet, 2011). To effectively participate in the social media information age there is first, the need to adopt and integrate Information Communication Technology system into the organization's operation policy. If this suggestion is adopted by corporate management, the new policy will allow employees to use information communication gadgets on the workplace during work hours. However, the types of job and environment construction industry employees will be working in have to be considered in the type gadgets to be used (Bowden et al., 2006). It was suggested that employees that work in the

field without easy access to corporate computer be allowed to use portable and rugged social networking gadgets on site to access head-office information resources and in-house administration system (Abrahamse, & Lotriet, 2011). With these gadgets employees can assess and share information from and to the corporate office on-the-go basis (Nova Scotia Construction Sector Council 2010).

Some companies allow only the functional managers (project manager, foremen, and crew leaders) to use social media gadget on site during the work hours to access work related emails and social media information (Abrahamse and Lotriet, 2011).

2.3.3 External stakeholders. Construction project execution is saddled with multiple skills, diverse stakeholders, and associates during almost every phase of the project as noted above. An average construction project consists of multiple participating subcontracting firms and associates (Eastman, M., Teicholz, P., Sachs, R., and Liston, K., 2008). The authors estimated that a typical ten million dollar contract project will have approximately 420 subcontractors and associates. Also they estimated that a project of this size will have about 850 participating personnel/employees, about 50 different documents, and 56,000 pages will be generated in the course of completing the project. They concluded that despite the number of involved team members in project execution, the industry still use oral, document-based and traditional web protocols.

To connect and coordinate among these teams and present a common front in responding to concerns of consumers and the general public over anything including integrity violation present a different ballgame for a typical corporation/organization (Vandenberghe, Bentein, Michon, Jean-Charles, Tremblay and Fils, 2007, ascited by Laer et al., 2013). Also, as noted above, the belief that consumers are apt to connect with low ranked employees more often than

the corporate spokesperson has created information control problem. According to researchers, consumers consider corporate representative's words as "cheap talk" (Farrel and Rabin, 1996 as cited by Laer et al., 2013).

Because of this development, some corporations and organizations are empowering their employees to respond in a personal manner to social media posts, but this empowerment comes with a price. The major price is the ownership of what was said and how it was said (Laer et al., 2013). With the number of team members that are involved in a project and the quantity of documents produced, it becomes a challenge to train every team member and get them to know all that is going on in the company. Hence, some companies decided to shut off all social media sites on the corporate machines. On the other hand, some companies decided to do the opposite; they allowed employees to socialize on the social media network, but on each employee's profile is a strongly worded disclaimer from the corporate office. The disclaimer will warn that employees are at their own risk and their positions, comments, approval, disapproval of anything are their personal opinion and that does not represent the company's position in any form (ASCE, 2013).

Based on the assumption and belief that consumers are likely to contact low ranked company employee for comments on their concerns, some companies are advising team members to be sensitive when contacted by consumers on any concerns. The foremost thing that employees/team members are told to do is to show great concern and empathy (Laer et al., 2013). Corporate managers believe that sometimes the customer might be using abusive language which might make it harder to empathize with them, but that should not be an excuse not to be professional by the employee (Green, 2004). Managers however, contended that customer deserves empathy not minding the way the customer is voicing his/her concerns

(McColl-Kennedy, Sparks, and Nguyen, 2010), (cited by Laer et al., 2013). Corporate watchwords to employees and team members are to be aware that it is all about repairing integrity violations if any and restoring confident, team members has to know that it takes time and effort; remember that the public is watching and listening on the social media (Laer et al., 2013).

2.3.4 Competitive advantage through social media text-mining. To remain relevant in the business world, companies and organization are engaged in diverse forms of competition. Companies compete among themselves on the basis of price of products and services, quality and quantity of products, and other intangible factors that is obtainable in the same industry and in the same geographical area. With appropriate competitive intelligence, an organization will be able to assess their weakness and strength as they compete in the business world. Acquired competitive intelligence helps organizations to make well-informed business intelligence decision to correctly analyze the future business landscape and refocus their business strategy to the current changes. Therefore, acquiring competitive intelligence becomes what organizations look for from every available source which has landed some into espionage charges. However, researchers believe that social media consumer-generated contents and information offer to organization opportunity of collecting and gathering competitive intelligence information intelligently (Dey, Haque, Khurdiya, and Shroff, 2011).

As noted above, the age of social media conversation-information-technology has empowered consumers to take active role in reshaping the design and delivery of products and service directly or indirectly (Hanna et al., 2010). Laer's team believe that with the active conversational participation and engagement of consumers and visitors on the social media, product design and process are subtly altered according consumers' tastes and needs (Laer et al.,

2013; Hanna, Rohm, and Crittenden, 2011). This development might be in part due to consumers' engagement of all participants on the social media sites, as they (consumers) converse about the quality of goods and services they receive their likes and dislike in those goods received (Garretson, 2008).

From design decision, to marketing of products and services, decisions-makers are actively watching the swing of the pendulum through the lens of social media conversation-information technology (Berthon et al., 2007). This is because consumers' generated- messages and conversations on the social media have some valuable and sometimes hidden messages to everybody out there depending on what concerns the individual. These tones of messages have information that when properly extracted and sieved, analyzed, and assimilated into homogenous relevant business knowledge, helps business executives to make an informed business decisions (Dey, et al., 2011).

Though a legal way method of collecting competitive business intelligent; social media information extraction takes time and effort because the information was presented without a lead. Hence interested companies in social media text mining would be ready to cut through the clutter of heterogeneous, scattered, and non-standard information presentation in diverse sites and take time to analyze the collected data into productive business information which could be turned into competitive business intelligence.

Based on the above assumption companies are monitoring and analyzing customer-generated contents on their website and on social media sites on daily basis through text mining. The gathered data become business knowledge and intelligent tools for decision making by the company's executive management. It is also recommended that to be competitive in the business world, companies need to migrate into their competitor's website to see what they are doing from

time to time to listen to the reaction of consumers per a given number of products and services on the social media sites (He, Zha, and Li, 2013). This is just to eavesdrop on their competitor's doorstep to know what they are doing and how to effectively compete in the business world. It is worthy to note that information on the internet (companies' websites and social media sites) are for public consumption; therefore there is no espionage charges; it is safe (Dey, et al., 2011).

Some writers believe that companies can also ask open-ended questions on the social media site about a particular product and service or otherwise, which according to them is taking positive advantages of the social media information technology. This is a creative way of taking advantages of social media conversation and engagement; listening and analyzing the ongoing conversations on the social media. Creative managers use social media conversations and engagement as social business moles to spy their competitor's camp and have first-hand information, which will be considered during strategic business decision making (He, Zha, and Li, 2013).

Above named researchers (He, Zha, and Li) believe that new product and services can be developed just by listening and analyzing the findings on the social media websites (2013). They also contended that under the tones of textual data generated on the social media site lies hidden knowledge that companies can dig up to develop or fine-tune their competitive advantage. Therefore, it could be fair to say that social media serves as an agent of creative change and innovation in the hand of company management and executives who monitor and analyze social media conversations. The monitoring, gathering, and analyzing of social media information content have to be consistent to make sure that the company has enough time to reaction and make necessary adjustments (Dey, et al., 2011).

According to Men and Tsai (2012), companies and organization should set machinery in motion by inaugurating and investing in a team of employees that can effectively spy and feel the heartbeat of the consumers on the social media through collaboration and conversational engagement. In a study involving social media competitive and text mining, He, et al., (2013) found that the ongoing conversational engagement on the social media could be a forecasting tool in the hand of a well-managed organization. The authors believed that this could be done through request for customers' opinions, review of products and services, and competitors' prices on identical products and services that they provide, and identify what has happened in the past and make informed decision on future predictions.

2.3.5 The challenges. The introduction and use of social media technology have not only permanently altered the traditional communication route between consumers, stakeholders, public, and providers of goods and services, but have also created a unique and new dynamic in the marketplace communication protocols. The new dynamic is an all-inclusive social networking conversational loop where consumers and providers of goods and services meet in a social media village (Avery et al., 2010). The same all-inclusive social media enticing propaganda has also affected and changed the traditional company top-bottom communication topography. The internal organizational communication terrain has become flatter, and the communication route redesigned as a social networking dual-carriage way (Jue et al., 2010). It is believed that this new development facilitates dialogue among all the stakeholders and actors in the organization (Hansen et al., 2011; Men, Tsai, 2012). Also other researchers believe that social media has significantly affected internal organization communication structure; reversing internal communication status quo top-down to bottom-top (Hansen et al. 2011 as cited by Hanna et al., 2011).

The latter (bottom-top communication method) comes with organizational information control and management challenges that this section of literature review is going to concentrate on. Some researchers believe that due to the current communication trend in the workplace that organizations/companies are dealing with a double edge sword; opportunity and corporate image management concern (Schniederjans, Cao, and Schniederjans, 2012). From one perspective, the added advantage of information flow for business creativity, business competitive intelligence and greater reach to customers and opportunity to project corporate image and defend corporate common interests (Schniederjans and Cao, 2012). However, from a different perspective the challenge of how to control what is posted on the social media sites by employees and associates that have business ties with the organization. This is a concern, according to some researchers because the public perception and interpretation of unauthorized employees' postings on the social media as corporate posting and opinion is at stake. This is a concern when the employees' posting is either unprofessional and the subjective nature of the posting and interpretation thereof posed a "representation problem" (Zhang and El-Diraby, 2012). Because of this type of concern, corporate organizations are advising employees to be aware of whatever they are doing on the social media sites. As a check to this, many organizations are mandating that every employee's social media profile should have a strongly worded disclaimer as noted above. The purpose of having a disclaimer is to let the prying eye of the public know that unauthorized employees' posting are personal and should not be misconstrued to be the opinion of their employer. Also this is to avoid possible injury law suit due to the content of unauthorized employees' posting on the social media sites (ASCE, 2011).

It is also the opinion of ASCE that there is a blurred line between corporate posting and the posting of an employee of the same corporation in the mind of the public. To avoid the

misconception between corporate opinion and employee's personal opinion, an organization or firm should officially anoint and empower a selected team or a person to be her representative on the social media sites. The selected group or individual will be the only recognized organization's mouthpiece before the public and any unauthorized employees' posting should not reflect the opinion of the corporate organization (Elefant, 2011). Elefant (2011) believes that having officially selected, trained, competent, and empowered representative/s has great benefits to the organization. The author listed some benefits of this approach, including effective maximization of the social media in responding to customer concerns and needs in a timely manner. Another benefit relates to having accurate documentation of customer concerns and needs for the corporate management to use during decision making process.

Notwithstanding the noted advantages above some argued that organizations are limiting the number of voices on the social media to avoid being challenged which they think will undermine their authority (Cheney & McMillan, 1990; as cited by Huang, Baptista, and Galliers, 2012). They contended that organizations want to maintain and remain univocally in order to enable senior management to retain control of information flow. In support of this stance, Huang et al., (2012) also cited Sillince (2005), as arguing that having a single corporate voice on the social media is not on the interest of the wider audience. According to the Huang et al. (2012), limiting the number of voices will be muzzling other viewpoints and restricting wider interest group from voicing their opinion. They contended that such a situation is inimical to innovation and change. Another contention raised by these researchers is that adopting corporate social media univocal stand will rob the management the necessary information that they (management) might use in decision making.

Other prongs of the challenges are: proliferation of diverse social media sites, multiplicity of consumer generated conversational contents, etc. As social media sites continue to multiply and consumer generated information content continues to multiply exponentially, organizations are increasingly finding it difficult to keep pace with tones of conversation that is going on every day. According to Kaplan and Haenlein (2010), in 2009, for every minute, an average of ten (10) hours of content is being uploaded into video-sharing of YouTube every day. The flocking of different social media and social network sites in the airwave has numerous interesting dynamics and challenges. Other social media dynamics in the workplace includes how it affects organizational policy on using social networking gadget on the workplace during work hours.

While some organizations are either still thinking of changing or modifying their policy on the use of smart phone and other social networking apparatus on the worksite during work hours to satisfy employees social media needs, some other organizations are already providing iPad or laptop/tablet for the employees to use on the workplace during work hours. Another group or organizations are cut in the middle; this group is limiting the use of these gadgets during work hours to the supervisors only (Abrahamse and Lotriet, 2011). This shift from the traditional policy of “employees are not allowed to use social networking tools on the workplace during the work hours” is in part to boost information dissemination among team leaders and the upper management, according to research conducted by Abrahamse and Lotriet (2011). However, it was the opinion of some researchers that the hidden undertone of this policy change was to accommodate and retain talented younger employees who consider their social media needs as very important in their job satisfaction as noted by “Training Daily Advisor” of February 15, 2013.

Some corporate management still frown at allowing employees to use social media networking tools to access social media sites during the work hours. The reason for this discontentment by some management is the fear that employees will misuse the company's time (work related) and engage in other activities that are not work related. Others who disagreed to this policy change cited workplace safety concerns. In an effort to strike a balance between safety at work and the presumed needed work related communication and conversation during the work hour, a new dilemma has emerged for company decision-makers. In an article titled "We are Connected: The Power of the Social Media Ecosystem," the authors made a case for having a systematic way of understanding and conceptualizing online social media conversation benefits to the company (Hanna, Rohm, and Crittenden, 2011). It is likely that based on this assumption of the benefits of social media conversation to an organization, that some organizations are not stringent, but relaxing their policy on using social media gadgets at work.

Study shows that social media have also added some twist to corporate marketing strategies. (Hanna, et al. 2011) contended that the new twist is a necessary drift from the traditional marketing strategy which they call new marketing myths, to accommodate the current social media wave that is tossing consumers and corporations into common social media circle. They argued that these myths were created from what companies had belief in and relied upon before the evolution of social media technology. They believe that these myths were once effective marketing traits for organizations, which had also worked well for corporations in the past.

Myth number one as noted is that companies and organization produce products or services that they want customers to buy or use. Social media technology has made that thinking to be obsolete and outdated marketing practice. In the social media age companies want to be

customer centered and they listen to whatever the customers are saying on the social media as noted earlier. Hence the customer's needs determine the products and services to be provided. Companies and organizations cannot operate in isolation of the consumers. The customers' input is required if the product and services that will be produced will not end up on the stacking shelves just to collect dust.

Another myth is that digital web is only for finding information about products and services and not for interaction with business organizations. This belief has almost evaporated from the mind of corporate managers and company decision-makers because of advance of interactive digital web. Now, the digital web is used for influencing customers and products and services providers, two way street (Hanna et al., 2011).

It is also no more a business marketing reality that consumers will purchase any product that is promoted by marketers. This has become a myth according to researchers because product purchases depend on what consumers think about the product; not necessarily what the marketers want the consumers to hear about the product as noted by Hanna et al., (2011). The next myth is that creating a forum to talk with customer over brand is dangerous and risky. Currently, the review is proving that organizations want to engage customers and general public on the social media. This review is showing that organizations are competing with each other on the social media, trying to connect and engage customers through creating brand community (Laroche, Habibi, and Richard, 2013). These writers believe that brand community is forum where customers are engaged and listen to and sharing of essential resources either emotional or material. Other writers also argued that companies are involved in brand community on the social media for sharing and negotiation of meaning (McAlexander, Schouten, and Koenig, 2002).

The fourth myth concerns companies use marketing communications to control their message. Consumers are engaging each other about products and services, and consumers' perceptions and needs controlling the message that organizations want to engage in or address. This is because consumers are bonding to each other through social media conversations to originate marketing topics for companies to either associate with or otherwise (Laroche, et al., 2013).

The new found myths are probably a pointer to the paradigm shift in the market due to social media technology which also brought to quick and untimely exit of many dot-com companies. In 2007, Ricadela quoted the Co-founder and Chairman of LinkedIn Reid Hoffman as saying that, "the ability to leverage relationships embodied in social networks will become one of the most transformative uses of the internet" as cited by Hanna et al., 2011 section 1 (para. 4). Owing to this new method of conversing, communicating and connecting, companies and organizations are creating their own you tube videos as a marketing strategic force to reach and attract customers (Crittenden, Peterson, and Albaum, 2010).

2.4 Corporate Impression & Image Management

Impression and image management are dynamic and the success of the first determines the successes for both (Biloslavo and Trnavčević, 2009). They also go hand-in-hand to each other. They are dynamic because each consumer's impression about a particular product might differ from the way another consumer thinks and feels about the same product. Corporate image management according to researchers starts with effective and steady presentation of the organization's image impression to the consumers. If the corporate public impression suffers the corporate image will also suffer. This was summarized by Schloser (2005): when the opinions on a website are very negative, consumers will adapt their opinion downwards" on the product, as

cited by Vries, Gensler, and Leeftang (2012, section H6b para. 6). Hence, impression and image management is continuous and dynamic because consumers at different location could have different view about a particular product and service. The totality of public impression about a company's products and services does not depend only on the information the company posted on the digital media; it includes what the company is doing offline, to ensure that consistent messages are being sent out (Pauley, Patel, and Mohamud, n.d.).

According to Piwinger and Ebert (2001), "impression management is a goal-directed conscious or unconscious process in which people attempt to influence the perceptions of other people about a person, object or event; they do so by regulating and controlling information in social interaction" (p. 1). Assuming that this definition of impression management is comprehensive enough and acceptable, the keywords are influence, perceptions, regulating and controlling information. Corporate image makers are mindful of the power of the media on their business financial strength. Perception changes from person; Ms. A's perception about a particular product might differ significantly from Mr. B's perception on the item; hence perception management in the present information age is a difficult assignment. However, through social media conversational engagement, corporate institutions engage the consumers at little or no cost.

Reputation means everything to corporate institution. Their ability to build trust and good relationship depends on how the institution and her products are well received; which is a measure of the customers' satisfaction (Biloslavo and Trnavčević, 2009). Public perception and impression of an organization are tied to how well the organization does economically at a given time. The message that the organization is sending out has to be consistent with the organization's comprehensive strategic goals and must be on course every time as the wind of

diverse public opinions tries to blow it off course (Bolino, Kacmar, Turnley, and Gilstrap, 2008; Mohamed, Gardner, Paolillo, 1999). The corporate image-makers' primary assignment is to create/design an impression message that resonates with consumers, protect and maintain the consistency of message or alter contrary impression or image held by the public or certain group of the public about the company or her products (Schniederjans, Cao, and Schniederjans, 2012). For this to thrive, organizations have to build a relationship network with the public through conversational engagement and flow of information. The above writers believe that impression management is very vital to organization's financial performance and like an actor, organizations should try to establish an identity, enhance and defend that identity at all times.

Researchers in this area also believe that impression management could be done through two different strategies. These two strategies or approaches are assertive/proactive and defensive/protective; they can be directly or indirectly implemented. It is the belief of the researchers that the difference between the two strategies is that assertive to present to the public what the organization is all about (desired identity) while the defensive/protective is to correct an erroneous impression about the organization (Bolino, Kacmar, Turnley, and Gilstrap, 2008; Mohamed, Gardner and Paolillo, 1999). To present an effective message that will represent the image of the organization, it is ideal that the organization avoid talking from sides of the mouth. What this means is that the message must be consistent with the organization's short term and long term goals.

As stated above, it is to the business advantages of companies and organizations to text mine the contents of social media conversations regularly, monitor, and analyze social media conversations that concern them. Text-mining goes both ways; the information that is communicated on the social media is for public information and any competitor could use the

message to undermine the originator's financial performance base. It is all about having a competitive business intelligent. However, with the plethora of social media sites springing up constantly, it will be very difficult if not impossible to effectively participate and engage in all the ongoing conversations in all the social media sites (Kaplan and Haenlein, 2010). Before an organization's representative/s weigh/s into a conversation, the representative has to be clear of what the goals are before getting involved in the conversation. The critical questions to ask are; whether the representative wants to provide solution to the ongoing customer concern, sway audience away from erroneous impression, or to present new product/service.

The organization's strategic goals (short and long term) will guide the company in the message design and delivery. With this said, researchers argue that the message will be tailored towards target audience. Organizations should focus on their target audience. According to Kaplan and Haelein (2010), the decision-makers should be very careful in the selection of social media they are involved. They believe that certain social media attract certain group of individuals and as such the corporate decision makers should actively participate in those social media that have a community of their targeted audience, otherwise they will not have enough time to do something else.

In the mist of the plethora of social media sites and the associated information overload, organizations are challenged with finding any damaging conversation information in a timely manner. No matter the social media sites adopted by an organization, the products/services review and online word of mouth section of social media sites are the central areas of interest to be monitored by corporate representatives. Some researchers call these sections "brand community" (Laroche, et al., 2013, section 2). Inherent in these areas are what some researchers called negative word-of-mouth information proliferation across social networks (Schniederjans

and Cao, 2012; Eddy, 2012). According to Fournir and Avery “Marketers hoping to nurture relationships with their consumers launched online communities and Facebook profile pages, but people came looking for price deals or a convenient place to complain” (2011, section 1 para.6). Therefore organizations’ representatives should be aware of the flash-speed of information disseminations on the social media network. Therefore, they have to be prepared to prey and nip on the bud any negative word of mouth that springs up on the social media against their organization immediately before it spreads out.

To effectively engage and monitor the ongoing social media conversations, it was the opinion of America Society of Engineers ASCE (2011) that corporate organization has to select a person or team of persons that will be responsible for this assignment. They contended that it will help to set up an established official protocol about social media conversations. The person or team will moderate and midwife any social media conversation that represents the corporate opinion. This according to them is to thicken and highlight the dividing line between public and private, and personal and professional opinions. They also believe that when a selected team is assigned this job, employees will not cross this line (misrepresentation of opinion by an employee) with the pretenses that it was thin and undefined (America Society of Civil Engineers (ASCE), 2011; Elefant, 2011).

Again, employees should be made aware that when conversing on sensitive topics like politics and religion, etc.; contributors should separate their personal opinion from that of the employer at all times. This can be achieved by having a disclaimer on every employee’s social media profile to avoid lawsuit as stated above. The suggested corporate social media disclaimer policy by ASCE shall have a generic disclaiming message on all the social media profiles of all staffs and contractors of the organization. The disclaimer policy shall be in effect as a check

against an unauthorized person providing recommendations, referrals, and endorsements. Their opinions on the social media should remain personal. The disclaimer developed by ASCE reads that,

“The opinions of ASCE social media channel creators, moderators, posters, and commenters are on their own, and not necessarily that of ASCE or its affiliates. ASCE will not be liable for any injury resulting from such statements” (section 1 social media policies; disclaimer, para. 1).

2.4.1 Ethics. Ethical issues are continuously becoming a concern in all fields of human endeavor including social media conversations. With such agreed discrete communication and engagement benefits, however, researchers believe that the unregulated and unedited social media consumer generated information content has also potential for personal or corporate harm (ArCher-lean and Pavitt, 2012). They are of the view that in spite of the glamorous benefits of social media conversational technology that attention should also be focused on how it affects people and their personal human rights and ethics. However, it is not the intention of the researcher in this particular study to dabble into the deep waters of human rights, but only to scratch ethics in relation to revealing trade secrets on the social media sites.

The trade secret of any organization is related to the strength of the organization's competitive advantage. Based on this assumption, the corporate trade secret has to be protected and guarded from the spying eyes of business competitors. With the ease of generating and posting information on the social media sites some organizations are on their toes watching and guarding their trade secrets. The user friendliness of generating and posting information on the social media sites inadvertently comes with the subtlety of alluring employees to let down their guard as they share information. This makes it very easy for employees to unknowingly reveal

company competitive trade secret of their company. And when this happens no matter how the culprits are punished, the corporate competitive base of the affected company has been shaken and it may not be the same again (Elefant, 2011).

For fear of espionage some German notable companies like Volkswagen and Porsche auto companies banned the use of social media in the workplace (Anonymous, 2011; Elefant, 2011). The reason for not allowing these social media sites like Facebook and Twitter was to reduce the possibility of leaking trade secret by employees unknowingly. However, the employees might be able to access social media sites at home on their individual times and that calls into question the effectiveness of that idea. To cater for the social media needs of employees those corporations that took the hard-line stance, corporate intranet social network were created to allow employees to discuss work related issues and converse with co-workers.

Corporate management is not immune to social media ethics issue. As the information posted on social media site is like a house built on top of a hill which is literally visible to the public; employers of labor have free access to the social media information as anyone else and they are aware that federal law prohibits any form of discrimination against applicants for job. However, the question that many are asking is, what would the employers of labor do if the employer saw on the applicant's social media profile pictures of his/her drinking stupor or tweets of colorful languages that are not professional. Should the employers still hire him or her to comply with federal law and running the risk of negligence hiring claims in the event of an accident or unethical behavior and misrepresentation or otherwise (Elefant, 2011)? This dilemma created by social media easy of information on-demand considering the proceeding question by Elefant will be left for other researchers to study and investigate what the outcome would be.

If corporate royalty (trade secret) is to be maintained there is therefore the need to restrict corporate representation to selected few corporate representative/s as noted above. Also as was noted previously, that consumers prefer to communicate with employees that are not the corporate mouthpiece, it was Elefant's (2011) view that the corporate organization should train their employees on what not to say on the social media. The training according to Elefant should center on how not to reveal trade secret on the social media and the consequences. Employees should be made to understand that they can be sued for defamation over unsavory social media comment. Additionally, every product or corporate concerns should be referred to the team empowered to respond as the corporate mouthpiece.

Who should respond to public request becomes something that the corporate should designate an experience person as the mouth piece of the organization.

CHAPTER 3

Methodology

Methods and Procedures

This study was conducted using qualitative research method. The qualitative structure of the study was intended to integrate comprehensive perceptions, experiences, and foresight of those of the study participants.

Communication is a critical part of an organization in achieving its set goals and objectives; however, the literature review suggested that construction industry has not fully embraced social media conversational technology. During the literature review, only few documented materials that dealt on social media and the construction industry were available; hence not enough information to think otherwise. Therefore, in a study of this nature where few information and data are available, it is of intrinsic value for the extended audience and the construction industry in particular that a qualitative study be conducted with Subject Matter Experts (SMEs) in the industry to smoke out and document the facts for reference purposes. Based on the literature review, it was evident that other industries have many documented information on the role social media play in their operation and management. Also the literature review at some point claimed that the construction industry is behind other industries in making use of social media, which was why this qualitative study was conducted with selected experts in the construction industry. The face-to-face or phone interview was to get their takes and perceptions through their work experience and foresight in the industry.

The selected participants were from notable construction companies with vast construction project and administrative experiences. Their construction project experiences ranged from three to 45 years of active participation in the construction industry. Hence, a

qualitative method was deemed appropriate for this study in order to understand from the SMEs, herein referred to as study participants, the role of social media in the construction industry if any or otherwise.

3.1 Research Design

The underlining design for this study was to have an effective process of collecting, collating, analyzing/sorting data into a homogenous form for clarity. The reason the literature review was stretched wide was to conduct a detailed analysis and scrutinize the role of social media in other industries since very little information is available that pertains to the construction industry. Also the review helped to develop series of interview questions that the study participants responded to for the purposes of this study. The questions were designed to fully understand the role of social media in the industry and to have documentation thereof for reference purposes or future study.

Five study participants were selected from the list of top construction companies in the industry as recorded in Engineering News and Record (ENR) with recommendations from experts in the industry. The researcher invited 15 people to participate in the study through letters of invite but only 5 volunteered to participate in the study. Two of the five participants work for the same company. The selection of study participants was originally limited to representatives of companies in the industry within reasonable proximity to the researcher's location (school). Considered to be within reasonable proximity are locations near to State of North Carolina. However, the study participants came from far than originally intended which include the following states and cities: North & South Carolina, Tennessee, Virginia, Atlanta, Mid-Atlantic (DC Area), California, Pacific (Guam/Hawaii), Texas, and Phoenix Arizona. A face-to-face

interview method was adopted for this study to allow the study participants a free flow of their perspectives on the subject matter through open ended questions.

The primary goal of the interview was to find answers to the questions raised in the early stages of this study research and probably raise some unanswered questions that might require more studies in the future. The interview questions were structured to reflect some of the areas that a typical construction company might mostly be concerned about during project initiation, execution and delivery. These include collaboration among team members, business-to-business (subcontractors), and general public at different stages during project execution and delivery. The interview questions were framed into two parts. The first part was biographical questions to build a framework to establish the study participants' active involvement in the construction industry and their qualifications (experience and position) to participate in the study before the actual study questions. The second part was made up of questions that pertain to the study topic. These questions were assumed to catch all the necessary information/data required to answer the pertinent questions raised initially in the previous chapter. The formulated questions were juried by research professors for content validity, quality and purposefulness towards the goal of the study.

The format of the study interview questions were as follows:

Part One (biographical) Questions

This section as stated above was designed to understand and establish the credibility and qualifications of the study participants. The questions were based the study participants' years of construction work and leadership experience in the industry, duties, number of employees managed in the company, volume of annual projects, and the state or regional/area of operation.

Part Two – Research Questions

The following research questions were framed to gather information relative to the role of social media in construction industry.

1. What is the role of social media in industrial organization? This open ended question was aimed at understanding the general perceptions of the study participants about the subject matter. In the course of answering this question participants were asked to explain in detail or to be specific based on the participant's individual response.
2. What is the role of social media in the construction industry in reference to creative innovation and change? According to the literature review it was noted that other companies are listening and monitoring the conversations on the social media to meet the demand of their current customers and other potential customers. This question was primarily intended to know if construction industry sees social media as agent for product innovation and change or not. Follow-up questions were asked to find out if the industry has any concerns about the social media conversation; and if yes how far does that impact the industry's activities.
3. How is social media used in group communication? From the literature review, it was found that the construction industry is known for engaging the services of multiple skills and associates in their project executions and delivery. Therefore, the participants were expected to shed some light on how information is managed in the construction industry environment. This was also intended to find out whether social media play any role in engaging stakeholders also to know if social media play any role in stakeholders' participations in decision making in the industry.
4. What is the role of social media in crises situations (during project execution)? Crises and conflict is part of the industry; do social media help to ameliorate or worsen conflict

situation. Again, it was the intention of this question to find out if social media cause organizational policy conflict any form. The literature review showed that if social media conversations are not properly managed it could cause a conflict in an organization.

5. What are the study participants' views relative to adoption and incorporation of mobile social network gadgets on the workplace during work hours? The literature review reveals that patchy and site relocation issues in the industry have made installing social networking communication technology untenable. Also the review noted that there was an inconclusive policy position on using and incorporating mobile social networking gadgets (iPad, Smartphone, and etc.) on the worksite during work hours.
6. What are the study participants' views relative to social media and ethics? Is there a boundary to what any employee can post and respond to social media conversation? At what stage is the boundary assumed to have been crossed by employee posting on the social media sites (individual opinion and not corporate opinion)?
7. What are the study participants' views on creating social capita/visibility through social media? This part has many prongs to it. This was structured to answer many questions regarding corporate intimidation and visibility, corporate impression, and image management.
8. Study participants' views on company's performance index through social media. Study participants were asked nostalgic and searching questions to justify any affirmative responses given above; documented or otherwise to justify getting involved in the social media conversations or not.
9. Participants' views on Knowledge Management: The literature review highlighted how other industries use social media for knowledge management. This was intended to

understand if construction industry manages experiences gain/learnt in the previous project through social media and how.

3.2 Sample Group

The five participants who decided to participate were from the list of 400 construction companies listed in the Engineering News Record (ENR) for the year 2012. After the letters of invitation were sent out via email, five prospective participants indicated interest to participate in the study. It is worthy of note that efforts were made during the selection of invitees to the study that the prospective invitees account as a true representative of construction industry. In light of this, the selected companies are companies that have operations and locations in multiple states with diversity of positions and operations. Considerations were also made to include large and medium size companies to represent the industry. The locations of the participants' companies stretched from South East to the Midwestern states of USA with a minimum of ninety five million dollars (\$ 95,000,000.00) and maximum of nine hundred fifty million dollars (\$ 950,000,000.00) annual contract.

The years of construction work experience of the participants ranged from three to forty five years of active and progressive participation in the construction industry with a standard deviation of 15.01. Their positions also vary as follows: Company Quality Control Manager, Community Development Advisor, Company Vice president in charge of Education & Training, and Company Vice president in charge of Operations. The position distribution of the participants covers office work (administration) and field work (operations).

The study participants were briefed on the purpose and objective of the study. They, out of their own volitions decided to participate in the study and in the interview to share their perspectives selflessly.

3.3 Data Collection

The protocol for the interview was the formulation of interview questions aimed at extracting valuable information from the study participants' wealth of knowledge for the purpose of the study. The formulated questions went through intensive scrutiny from the senior professors after getting green light from North Carolina Agricultural and Technical State University (NC A&T) Internal Review Board (IRB).

It was the view of NC A&T IRB office that this qualitative study and method of study do not pose any treat or harm to the participants; hence participants did not qualify as human subject. However, a consent letter was also formulated after the similitude of NC A&T IRB consent letter sample. The content of the consent letter is to dispel any confidentiality and ethical concerns that participants might have. Other information contained in the consent letter is as follows:

- a. Participants are made to understand the purpose of the study and their rights; any participant can withdraw any time during the interview or study.
- b. Assurance that pseudonyms will be used in place of the study participants' actual names to protect and conceal the participants' real identities. However, their actual appellation will be used to establish credibility of information and data collected.
- c. The consent letter formally seeks the prospective participant's permission to audiotape the interview for data accuracy and as a check of consistency of field notes with study participant's responses in case of ambiguity during any time in the study.

Also a letter of invitation to participate in the study was sent to each prospective participant as email attachment. The medium of communication was email via the study participant's company official email addresses. To those that indicated interest in participating in

the study, a copy of the consent letter was sent to each of them. As noted above the consent letter was also to obtain permission from the prospective participant o audiotape during the interview; to have another documentation to support the field notes.

After the consent letter was signed by the prospective participant and returned to the researcher, the date for the interview was fixed. The study participants were asked to select a location and time for the interview for personal privacy, comfort and convenience. To protect the privacy of the participants, the researcher assigned pseudo names to the participants, however, their official position appellation/title in their companies were maintained as stated above to establish credibility of the responses and the of the research.

The interview questions were open-ended to allow participants to express their perceptions based on their company policy, construction industry's work experience, and personal experience. Follow-up questions were also formulated for clarity and detail if necessary depending on the response given. Therefore, participants were encouraged to use examples where necessary for clarifications and detail. To save time and resources, two of the participants that were located in the Midwestern states granted telephone interviews from their respective offices. During all the interviews (face-to-face and telephone) field notes were taken and audiotapes were recorded without personal identify of the participants. The notes and audiotape of the interview were securely kept by the researcher to maintain confidentiality of the participants and security of the documents.

3.4 Data Analysis

At the end of the interview, all the responses from the study participants for the formulated and follow-up questions as audiotaped were transcribed with word processor and stored in an electronic folder. The transcribed document was compared with field notes for

consistency of information and clarity. The gathered information were scrutinized and analyzed into a meaningful and logical data for the purpose of the study goal. The responses were also grouped into pattern and logic to make sense with the purpose and the guiding questions of the study (Creswell, 2007). The resemblances and differences of the responses were documented and any signs of correlations were also noted in light of the prevailing circumstances and uniqueness surrounding each participant.

CHAPTER 4

Results and Discussion

The interview questions as stated earlier were grouped into two segments; biographical and the study-probing questions to understand the role of social media in the construction industry. Face-to-face interview method was used because it offered multiple opportunities to finding answers to the questions posed in the earlier chapter. Also it allowed the researcher to listen to the study participants and read their body language, which might prompt follow-up questions. During the interview, the study participants were first asked the biographical questions to establish their credibility, qualifications (position) and experience in the industry. The necessary qualifications centered on the participant's progressive and active involvement in the construction industry and the decision-making position in the company. Other parts to their qualification are the ability to effect policy change, knowledge, and interpretation of organizational policies and principles of operations. The following pseudonyms names were assigned to the study participants to conceal their true identity. The participants names were Tommie, Johnson, Scalcione, Orjison, and Washeed for the first, second, third, fourth, and fifth participant respectively.

4.1 Biographical Information

The first participant, Tommie holds the position of “Director of Business Development and Training” in his company that operates from Winston-Salem to the coast of North Carolina and some parts of Virginia. He controls an annual business volume of about one hundred fifty million dollars (\$150,000,000.00), and has been in the construction industry for about 18 years and has served in the current role for 13 years.

The second and third participants, Johnson and Scalcione hold the “Quality Control Manager” and “Community Development” positions in the same company, and they have been in the industry for three and five years respectively and in the current roles. They both are working for a company that operates in the Mid-Atlantic (DC Area), Northern and Southern California, parts of Texas, Phoenix Arizona, Guam, and Hawaii. They however, did not give the strength of the employee and worth of the project they handle annually.

The fourth study participant Washeed is the Vice President and Regional leader of his company. He is in charge of operations and has been in the construction industry 45 years and 20 years in the current role. His company does business in about five states including Ohio, Tennessee, Kentucky, North Carolina, Indiana. His company manages projects worth about nine hundred fifty million dollars (\$ 950,000,000.00) annually with about 900 employees.

The next study participant Orjison was hired by a company that operates in North and South Carolina, South Virginia, Northeast Georgia, and Tennessee. He is in charge of the “Education and Training Unit” of his company, and has been in the construction industry 20 plus years and five years in the current role. Orjison’s company has about 130 employees and controls project that worth about two hundred million dollars (\$ 200,000,000.00) a year.

The following table shows the summary of the responses for the biographical questions. The questions were paraphrased to fit into the available cell spaces in the table 1 below.

Table 1

Summary of Biographical Information

Questions paraphrased	Tommie	Johnson & Scalcione	Orjison	Washeed
Role in the organization?	Director of business	Quality Control	Vice president In charge of operations	Vice president In charge of Education Unit
Years of Experience	18 years	5 years	45 years	20 years
Annual Volume of projects	\$ 150 million	No response	\$ 950 million	\$ 200 million
Average # of employees	no response	No response	900 (salaried & casual) employees	130 employees
Locations	North Carolina & Virginia	District of Columbia, California, Guam/Hawaii, Arizona, Texas,	North Carolina, Tennessee, Ohio, Indiana, Kentucky	North Carolina, South Carolina, Georgia, Tennessee, Virginia

4.2 Part Two – Research Questions*Question # 1: What is the role of social media in industrial organization?*

The first participant, Tommie the “Director of Business Development and Training” in his company believes that social media has some roles to play in an organization. But he however, said that social media play much role in the retail industry than in the construction industry. When asked to expound on why he thought that there was social media role play disparity in different industries, Tommie was of the opinion that it was due to the uniqueness and nature of the construction industry. He went ahead to expound that in his company, social media is used as notification tool and not for conversation. As the company’s business development leader, communications and conversations are through email and telephone he added.

The second and third participants Johnson and Scalcione hold the “Quality Control Manager” and “Community Development” positions respectively in the same company. Both of them offered responses to the interview questions together via written response to the interview questions. In their own words they said that, “The role of social media is a very important in any business this day and age. Whether it is advertising, marketing, sharing, or informing, using social media as a communication tool is very valuable.”

The next participant Orjison, is the vice President and Regional leader of his company. His belief is that social media has lots of positive role to play in an organization. He praised the invention of Facebook and LinkedIn and commended social media “information transfer ability”. He contended that he sees more construction company employees use LinkedIn more often than other social media sites. He highlighted that corporate management policy as possible reason why construction company employees use LinkedIn social media site more often than other social media sites. He was quick to add that the construction company workers might use other social media in the future considering the trend in the social media adoption and relevance in peoples’ lives.

To the next participant Mr. Washeed, oversees the “Education and Training Unit” of his company, sounded very optimistic about the role of social media in an industry. However, he had words of caution at the same time to those involved in social media conversation. In his words, “You have to be very, very cautious because not all the messages on the social media are true.” When prodded further on the issue he reluctantly added that social media conversation is “necessary but, also very dangerous” and advised those that want to be involved to monitor what the conversations are.” He concluded that not all the messages in social media conversations are true.

Question # 2: What is the role of social media in the construction industry in reference to creative innovation and change?

Tommie narrated that his company has Twitter and Facebook accounts but these social media profiles are not used or are sparingly used by the employees of their company for communication only. But, he said that his company uses LinkedIn for contact information only, and that is it and that nobody in the company is involved in social media as a corporate representative.

Mr. Johnson and Mr. Scalcione, second and third participants (both are working for the same company) gave striking detail of how their company uses social media during project execution in areas where peoples' freedom of movement might be impeded because of their construction activities. They responded as follows,

When performing construction in a dense urban environment, like Washington, DC or the City of Baltimore, MD, odds are the construction site will be near a residential area. [Our company] believes being a good neighbor includes being transparent with the members of the community that live in close proximity to the site. Therefore social media is used to communicate early/late work hours, street closures and changes, noise disturbances, etc. to keep the community involved with what is going on in their back yard.

They said that each project's representative is expected to announce to the general public in the areas where their company's construction activities might affect the citizens' normal way of life. The project representative will let the public know when the construction project is expected to start and finish. These two study participants agreed that they are not likely going to be involved in social media conversation in the future because they wanted to be known as the "largest company/General Contractor that nobody has ever heard of."

Orjison sounded different from the two most previous participants on how his company uses social media. He acknowledged that his company uses blogs and twitter to “post stuff.” When asked further on what he meant by post stuff he politely avoid the question by saying that he is not an expert in those areas, but maintained that there is somebody in charge of posting and monitoring what is posted on the social media sites. Orjison further commended the ability of social media to project a company’s name and that the traditional method of communication like formal letter writing is almost gone. According to him “communication is a big thing!” But he however said that his company does not use social media for mass media publicity because his company is privately owned and as such they are not required by law to do that.

On the same question Washeed noted that his company uses social media mainly as press release tool on what the company is doing. Some of the things that the company will use social media to publicize are things like scholarship foundation for students and other activities of charity he added. He however added that his company does not use Facebook. When asked why does not his company use Facebook? He simply responded that it is just management policy, but concluded that Facebook could be used in the near future.

Question # 2a: Do you have web-care division in your company?

A follow-up question was asked if the study participants have a web-care division in their respective companies. On this follow-up question, Tommie’s response was in line with his response earlier. He maintained that his company does not have a web-care division because they only use LinkedIn for contacts information only and that they are not involved in social media conversation and that’s why the company does not encourage employees to use social media.

The second and third study participant (Johnson and Scalcione) reiterated that their company has a web-care unit (project representative) that is localized just to a single construction

site and not companywide; saying that the company has multiple reps for different work unit.

When asked to comment on this type of segmented and patchy arrangement where each project site has social media rep, why not companywide. They responded that,

Social media has a huge potential to create negative perceptions and feedback, which is something [our company] wants to stay away from, hence the limited exposure. [Our company] intends to stay observed by its ability to build buildings as an organization, and not how we are observed on social media that can accept negative commentary/comments from opinions of antagonists.

A different view came from Orjison, he commented that his company has a web-care division and there is personnel assigned to monitor, post, and tweet information on the social media. On the other hand, he did not name any particular topic that his company discusses on the social media sites when he was asked to.

Washeed also followed the path of Orjison that his company has web-care division that was housed in the company's Marketing Unit. He concluded that he does not know much of what they do because he is not an expert in that area.

Question # 2c: Impact of social media in the construction industry

This follow-up question was to find out the impact of social media positively or otherwise in the construction industry. Tommie, Johnson, and Scalcione individually maintained that there is no impact that they know of, while Orjison said "not really; nothing comes to mind."

Washeed disagreed significantly from others on the impact of social media in the construction industry. He said that social media has many positive sides to it. He outlined the positives as magnifying company's name, and aid communication in many ways. He concluded

that the age of formal letter writing is almost over among construction workers and that social media communication system is taking over gradually.

Question # 3: How is social media used in group communication?

On using social media for group communication among employees, subcontractor, and client, Tommie supposed that his company does not use social media for group communication; he emphasized that there is no particular reason. When probed further if his company uses social media to reach potential customer, Tommie reiterated his earlier statement that his company neither uses social media platform as a primary nor as a secondary reach-tool. He said that, “social media (LinkedIn) is just more of follow-up tool, is nothing to depend on.”

The second and third participants in this study, Johnson and Scalcione did not acknowledge using social media for group communication either. They simply said “we do not,” when pressed further for more detail why they do not use social media for group communication. They maintained their resolve to stay away from getting too much into social media conversation—they expressed their satisfaction using phone and email only to connect with employees and subcontractors. The two technocrats (Johnson and Scalcione) said that social media do not play any role in their company connecting with employees. They also believe that social media do not play any role in their company’s response to request for proposal (RFP). They reiterated their company’s belief in the effectiveness of word of mouth from repeated clientele. They said that large portion of the projects their company executes is as a result of repeated positive word of mouth, and that their company banks on repeated positive word of mouth heavily for obtaining new projects. These two experts again maintained that their company uses social media as a transparency tool—publicity tool.

Orjison acknowledged that his company uses social media to communicate with their internal stakeholders and customers. He said that his company has corporate (internal) YouTube that serves the interest of internal stakeholders. When asked why his company decided to device their own internal YouTube, he presented a couple of reasons. According to him, one is to protect internal communication from outside audience and also to satisfy the social relationship needs in the employees in the workplace. He also said that employees are encouraged to use the corporate internal YouTube to send thank you messages, post and respond to inquiries from coworker. He also reiterated that his company uses social media sales, problem solving and get the word out. He however could not emphasize how the company uses internal YouTube to promote sales.

On this issue Washeed slightly differed from Orjison, he said that his company only uses webinar and GoToMeeting to connect with stakeholders for conferences and meetings. His company does not use other forms of social media for communication according to him.

Question # 3a: social media tool for employee training

While the first three study participants (Tommie, Johnson, and Scalcione) noted that their companies do not use social media for employee training, Orjison however shared different point of view. He narrated that his company uses social media for training in the form of podcast, and webinar. He said that his company also uses “Go ToMeeting” more often where trainees (employees/participants) can view the slide of the presentation from diverse locations on the computer when connected to the presenter. The trainees according to him also hear the auditory without seeing the presenter.

The fifth participant, Washeed was excited that his company uses social media for employee training. In his words, “Yes, without a doubt!” He emphasized the benefits of using

corporate (internal) YouTube and Twitter for employee training in his company. He echoed the advantages of this method of training; saying that employees can access the training on-the-go on their smart phones and iPad. He also shared the same perspective with Orjison on using Go ToMeeting to reach potential customers/clients. He concluded that some of his company's clients follow their blogs and conversations he maintained that the company's blogs allow them to get the word out.

Question # 4: How is social media used in crises situations (during project execution)?

Interestingly the first, second, and third study participants (Tommie, Johnson, and Scalcione) believe that social media do not play any role during conflict and crises situation. They argued that any information on the social media could be misinterpreted by the public and that could worsen the situation and wondered why internal crises and conflict should be put on the social media.

On the other hand, Orjison noted that social media could play a positive role during conflict or crises situation. He however was concerned about the documentation of social media conversation. He again cautioned against using social media because according to him "people do not follow instruction." Orjison said that his company uses emails for documentation purposes and that his company does not use texting because it may not be easy to track and document. He equally held that his company does not use social media during request for proposal for a project; all proposed project information is normally posted on the company website. According to him subcontractors are selected through private invite only based on their previous contract record with them. He concluded that based on tracking and record purposes his company chose to use American Institute of Architects (AIA) documents for all business transaction in all contract circumstances including conflict and crises situations.

According to Washeed, his company does not use social media during conflict or crises situation because according to him social media lacked tracking and documentation. For the above reason his company uses email only and that his company does not use texting either for the same reason.

Question # 4a: The use of social media during RFP and any other area

Tommie, Johnson, and Scalcione believe that social media do not play any role in their company during project request for proposal (RFP). Unwavering on their company's position on social media conversation, Johnson and Scalcione reiterated their company's belief in the effectiveness of word of mouth from repeated clientele. They said that large portion of the projects their company executes is as a result of repeated positive word of mouth, and that their company banks on this heavily for obtaining new projects.

But Orjison differed from the previous three participants; according to him his company uses video presentation during project RFP. He however added that during project RFP that his company uses private invite only for hiring a subcontractor for their projects.

The fifth participant, Washeed also shared the same perspective with Orjison that social media can be used during request for proposal. He highlighted that his company uses videos during presentation for a project request for proposals, adding that everything is going electronics. He was optimistic that in the near future that social media could be used for almost everything. He however was worried about the legal ramifications that will be involved, but said that he will leave that concern for the legal division to worry about.

Question # 5: What are the study participants' views relative to adoption and incorporation of mobile social network gadgets on the workplace during work hours?

On the issue of using portable social media networking gadgets on site during work hours, Tommie's response affirms his stance on the previous questions. His stance showed that his company allows things like Tablets or smartphone that has connection and access to the company's website and emails. He said that the company has website for only highly visible projects.

Johnson and Scalcione also answered in affirmative that their company allows using social media networking tools on the worksite; however they insist that the use must be work related before it could be used during work hours.

Orjison did not differ from the beliefs of other study participants on this issue; he was however concerned if employees will misuse those gadgets because his company has no policy on smart phone use on worksite; it is being assumed that the employees will act like grownups and will not misuse and betray the trust the company has on their judgments.

Study participants had a common consensus as the fifth participant Washeed shared the same opinion that employees are allowed to use portable social media networking gadgets on the worksite provided those gadgets are to be used for official purposes only. He contended that using those communication gadgets on site during work hours has some return on investment (ROI) because according to him it saves time. He argued that the time that would have been used to go to trailer office to look for the project plan could be used for something else because the employee will have quick access to the project plan and specification handy with his/her tablets.

Question # 6: What are the study participants' views relative to social media and ethics?

The study participants were presented with question on social media ethics in the workplace because organizations are careful not to violate any perceived ethics in the workplace. The first participant Tommie said that he did not see any concern with using social media

gadgets in the workplace, but pointed out that if employees are allowed to do anything on the social media that there is the tendency of breaching official code of conduct. He concluded that since his company is not on the social media conversation that he does not know much about that.

The next two participants Johnson and Scalcione affirmed that there are possibilities of the code of conduct violation when employees are allowed to be involved in social media conversation. They concluded that fear of ethics violation also contributed to their decision to stay away from social media conversation, saying that social media conversations have potential to create negative feedback and tension in the workplace.

Orjison believe that there is nothing wrong with allowing employees to access social media in the workplace; but according to him “allowing employees to get entangled in social media conversation can generate negative outcome.” Washeed expressed some reservations in social media conversation b employees, but he however added that his company does not micromanage their employees.

Question # 6b: Use of social media during employee selection

A follow up to the question above; the participants were asked about their view of the role social media during prospective employee selection. Tommie maintained his belief that social media do not play any role during employee section in his company. He said that his company does not go beyond normal check for ethics (background check) which according him has nothing to do with social media profile of the potential employee.

Johnson, Scalcione, Orjison, and Washeed shared the same view with Tommie on this same issue, saying that their companies only conducted normal background check of potential

employee without getting into the prospective employee's social media profile. Johnson and Scalcione concluded that "we do not track anybody's social media activities"

Question # 7: Creating social capita/visibility through social media

Responding on how corporations can create social capita through social media, Tommie commented that he is not aware of his company using social media to create corporate visibility apart from using social media for public notification and press releases. Johnson and Scalcione distanced their company from getting entangled with social media conversation. They both maintained that their company wants to be off social media radar.

Orjison and Washeed reasoned that their companies use social media for special announcements. Washeed gave instances where his company employed social media as a tool to build social capita. He said that his company used social media to announce special student foundation program of \$250,000.00 in Charlotte North Carolina recently.

Question # 7a: Announce annual report or promote services through social media

Also the study participants were asked if their companies use social media to announce annual report or promote company services. Four of the study participants answered that they do not use social media to announce annual report. Washeed argued that as a private company that they are not required to do that, while the first participant Tommie simply avoided this question.

On the using social media to promote corporate services; laying credence to the advantages of using LinkedIn, Johnson and Scalcione narrated how their company recently started what they called "LinkedIn initiative." According to them LinkedIn initiative requires all managers to post their qualifications on the corporate profile of LinkedIn social media. When asked why posting the mangers qualifications on LinkedIn. They responded that that is a way of letting the public to know that they have qualified and competent managers in every field. They

were probed further to elaborate more on the LinkedIn initiative because originally they said that they (their company) do not want to participate in social media conversation. Their answer showed that they use LinkedIn initiative just to post the credentials of top managers and was not to engage anybody in a social media conversation.

Other participants were in agreement that their companies use social media to promote corporate services, but none of them expounded further even when they were asked to give detail on social media is used to promote corporate services. The only thing that stood out was that they post information on the corporate website

Question # 8: Study participants' views on effect of social media on company's performance index

Majority of the study participants do not have a notable evidence of return on investment that will encourage Construction Company to be involved in social media conversation. Tommie, Johnson, Scalcione, and Orjison said that there is no return on investment for their company to get actively involved in the social media conversation.

However, Washeed had a different opinion. He believes that social media gadgets save time when used on workplace to promote rapid project execution; saying that time is money. But on social media conversation, he said that he has no record, but added that there is possibility of record somewhere nationally.

Question # 9: Participants' Views on Knowledge Management through Social Media

When it comes to using social media to capture and apply knowledge learnt in previous project, Tommie believes that different types of social media are helpful in knowledge management. He narrated that his company uses what he called "Bluebeam and Evernote." According to him during their weekly meeting, the attendees come to the meeting with pictures

of what they encounter or problems they solved prior to the meeting. He said that these pictures and sketches normally generated healthy discussions leading to ideas of how the problem was solved or how to solve the problem if it wasn't solved yet. Sometimes a more robust approach of solving a particular problem could generate during the meeting.

Johnson and Scalcione had objection and disapproval to using social media to document knowledge gained during project executions. They however, said that they use their corporate intranet to communicate from district to district among employees. Lessons learnt during project execution are shared through company "Risk Assessment Database (RAD)" and during monthly project review meetings according to them.

The fourth and fifth participants Orjison and Washeed did not differ from each other in their opinions. They nonetheless said that their companies manage and share knowledge learnt internally away from the public and spying eyes of their competitors. They said that they adopted internal approach of using emails and weekly meetings. According to them during their meetings, pictures, documents and experiences were shared among the attendees as a method of information gathering and knowledge management.

Table 2 shows the thematic reporting analysis of data collected during the study. The thematic analysis was the product of data coding, notable response pattern, commonalities, and dissimilarities of study participants' perceptions. In this study the researcher used open coding, by dividing the data collected into parts and sieved out the similarities of the data as suggested by Neuman (2011).

Table 2

Commonalities/coding of data

Codes	Study participants	Transcript of Participants Perceptions
Question # 1. What is the role of social media in industrial organization?		
Communication and information management tool	Tommie Johnson & Scalcione Orjison Washeedused as notification tooladministrative, info. comm. Tooltool for information transfer ...growing part of business
Question # 2: What is the role of social media in the construction industry in reference to creativity innovation and change?		
Information/publicity tool	Tommie Johnson & Scalcione Orjison Washeedfor contacts only (LinkedIn) publicity tool during proj. executions post stuff—blog ...press release on the co. activities
Question # 4: How is social media used in crises situations (during project execution)?		
Does not play any role during RFP or crises ..could escalate the problem	Tommie Johnson & Scalcione Orjison Washeed	... believe that it does not play any role ...did not think it plays any role ...social media could worsen the crises ...could play a role, but wondered docu.
Question # 5: What are the study participants' views relative to adoption and incorporation of mobile social network gadgets on the workplace during work hours?		
Increases productivity, reach corporate information	All participants allow these gadgets for work related purposes; no surfing the internet
Question #6. Are the study participants' views relative to social media and ethics?		
Social media has no role to play during employee selection	Tommie Johnson & Scalcione Orjison Washeed	all the participants noted not checking prospective employees social media profile
Question # 7: Creating social capita/visibility through social media		
Only used as publicity and press release tool	Tommie Johnson & Scalcione Orjison Washeed	...nothing more than press release tool ...public notification tool..no conversation ...announce special event ...publicize Co. charitable service
Question # 9: Participants' views on Knowledge Management through social media		
Use corporate intranet, picture weekly meeting knowledge management	Tommie Johnson & Scalcione Orjison Washeed	..uses company's intranet, bluebeam ...corporate intranet/risk assessment Database (RAD), weekly meetingemails & pictures, weekly meetingemails & pictures, weekly meeting

The coding in the tables two above and three below is a summary of the similarities and disagreements in the participants' perception of the role of social media in the construction industry. The

participants agreed in majority of the areas as shown in table two above. Those areas of agreement were pointer that participants do not believe that social media has major role in their respective companies as shown in the table two above. According to the study finding, study participants disagreed in one third of the study questions as shown in table three below. However, those areas of disagreement are the core of the study questions. These areas of disagreement as contained in table three significantly point to the study participants believe that their company has no incentive to actively participate in social media conversation. In all, evidence that construction industry is actively involved in effective social media conversation was lacking according to the study.

Table 3

Dissimilarities

Codes	Participants	Transcript of Participants Perception
Question # 3: How is social media used in group communication?		
No participant uses Social Media for group communication (intranet; internal communication)	Tommie Johnson & Scalci Orjison Washeed	does not use it for communication; emails uses email and phone uses corporate intranet for internal communication Webair & Go ToMeeting used for communication
Question # 8: Study participants' views on effect of social media on company's performance index		
Three participants had no response regarding getting actively involved social media conversation One participant saw need to get involved in social media conversation	Tommie Johnson & Scalci Orjison Washeed	...did not believe that there is return on investment in social media conversation ...depend of positive word of mouth from repeated clientele ...has no knowledge of any return on investmentbelieves that there is return on investment and could somewhere nationally

CHAPTER 5

Summary, Discussions and Conclusions

The primary purpose of this qualitative study was to investigate the role social media play in the US construction industry. In the course of the study, five “Subject Matter Experts” agreed to participate in the study. Another secondary driving force for this study was to find out, based on participants’ perceptions, if there is any credibility to the premise that the construction industry is lagging behind other industries in applying social media conversational technology.

5.1 Summary of the Study

To achieve the research goals, the researcher developed a series of interview questions that provided differences of opinion towards social media conversation in the construction industry. The questions were presented to the Subject Matter Experts (SMEs) herein called study participants. The study participants were interviewed individually at different times and locations as was agreed. There were five participants from four construction companies. These companies represent wide range of construction companies with vast experience in the industry, ranging from three to 45 years. The participants’ companies handle minimum of ninety million dollars (\$90,000,000.00) to maximum of nine hundred fifty million dollars (950,000,000.00) worth of projects annually. The questions were open ended and participants were allowed to air their perception without interruptions from the researcher. The interview lasted for an average of 30 minutes each during which participants responded to the formulated questions and any follow-up questions for clarifications and detail.

At the end of the entire exercise the researcher noted area of agreement among the participants and where they differed. Also noted were where the interviewees’ responses supported the findings from the literature review. What surprisingly emerged from the interview

was the association of the years of experience in the industry and social media informational technology use of the study participants. The participants with least years of experience in the industry tend to be staying away from social media conversation, while participants with more years of experience tend to be somewhat engaging social media at somewhat level. However, the latter also expressed caution as can be viewed in Table 2 of chapter 4 above. They expressed fear in participating in social media conversations, describing the entire social media conversation idea as very dangerous. The matching responses according to the interview were regarded as organizational policy, which has nothing to do with the participants' years of working experience in the construction industry or personal belief towards the subject matter.

5.2 Summary of Findings and Discussions

In this qualitative study, many similarities and differences were noted from the study participants' perception of the role of social media in an industry and in the construction industry in particular. The study participants believed that social media technology is a tool for communication and information sharing as supported by Crittenden et al., 2011; Jue et al., 2010; Kaplan and Haelein, 2010; Huang, Baptista, and Galliers (2012). The study participants also agreed that social media have a positive role to play in the operation of an organization.

Notwithstanding the overwhelming positive agreement on the role of social media in an organization, some study participants kept sounding words of caution to those engaged in social media conversation throughout the interview period. Relating to the literature review, it was noted that previous researchers believe that social media is necessary to organization and also very dangerous if not properly managed (Hanna, et al., 2011). According to one of the participants, the underlining danger and concern was that "people do not follow instructions and rules," that caution has to be exercised in getting involved in social media conversation. Two

participants sounded similar and candidly put their company's stand regarding social media conversation as follows:

Social media has a huge potential to create negative perceptions and feedback, which is something [our company] wants to stay away from, hence the limited exposure. [Our company] intends to stay observed by its ability to build buildings as an organization, and not how we are observed on the social media that can accept negative commentary/comments from opinions of antagonists.

The research findings were also consistent with past findings and/or reports on company's social media selection and participations. It turned out that LinkedIn social media site was the favorite of the construction industry according to the findings. This was in part according to the study participants that LinkedIn social media site has features that are construction industry friendly. Kaplan and Haelein (2010) believed that a company should make selection of the social media that it wants to participate in based on the targeted audience. However, the industry does not make adequate use of the conversational capabilities of the LinkedIn either. The use according to the findings was mainly to get contact information of fellow contractors and associates. Beyond this, LinkedIn is only used for posting of professional qualifications of company senior managers. Also noted was that some construction companies had a policy to blacklist certain social media sites. Some companies blacklisted Facebook social media from being accessed from the company machine as a way to discourage employees from getting involved social media conversation.

As noted in the literature, companies tend to maintain univocally stand on the social media by appointing a corporate social media representative (Elefant, 2011). This study also noted that construction companies appoint a social media corporate representative or mouthpiece

that does all the information posting on the social media. But, because the industry does not engage in social media conversation as noted, the web-care position was either nonfunctional or it was a position just created for image management. Again, construction industry often adopts the prescriptive information dissemination position as noted by some research participants, thus confirming the findings of previous researchers (Kaplan and Haelein, 2010; Piwinger and Ebert, 2001). These researchers noted that at the early stage of conversational social media technology, many industries took the prescriptive information dissemination posture similar to what the construction industry is doing now. Hence a pointer that construction industry is lagging behind in using social media conversational technology (Rowlinson and Croker, 2006).

As noted during the interview, participants acknowledged using social media only for posting of information like the company's annual award and make press releases with no conversational engagement or channel for feedback from the public. This finding about construction industry using social media as press release or as a notification tool rhymed with the findings of previous researchers (Erin, 2011). Lack of documentation tracking was one of the reasons why some companies in the industry decided not to use social media to connect with employees and subcontractors during project executions and delivery. Some study participants did not believe in the social media consumer conversation. They argued that they get a large portion of their projects through repeat clientele based on their past contract relationship and reputation. A company's dependent on her reputation and past contract relationship for new project and continuation in business as noted above confirmed what previous researchers found about corporate image and impression management plan (Biloslavo and Trnavčević, 2009). It was the belief of these two researchers that corporate image is very important to the organization for their business existence.

Although all the study participants believed that social media has important role to play in the success of the organization; however, only two of the participants acknowledged that their company use social media for training. One of the participants said that his company uses webinar and GoToMeeting technologies to train employees. He further expounded how these methods of training have helped his company to organize training for employees in diverse locations concurrently through audio messaging system, thus supporting previous findings (Abrahamse and Lotriet, 2011). Another participant who also acknowledged that his company uses social media for training employees expounded that his company uses internal corporate YouTube and intranet.

Interestingly too, only two out of the five participants responded positively using social media to connect with potential customers. One told a story of how his company encourages their customers to follow them on their blog which is consistent with the recommendation from some writers as noted in the literature review (Pauley et al., n.d.). Other participants' companies simply depend on email messaging system and sparingly use text messaging to connect with potential customers.

Another point of general agreement existed when it comes to allowing employees to use social media networking gadgets on workplace during the work hour. The finding of this study showed that companies allow employees to use social media networking tools on construction worksite during the work hour partly to satisfy the employees' social media needs (Training Daily Advisor, 2013). This was however inferred based on the reasons given by the study participants for allowing the use of social media networking gadgets on site and during the work hours. The conviction to make this inference was that almost all the participants in defending their reasons ended with statement like, "you know that young people love their smartphone...."

However, this does not rule out entirely the other side of the participants' stand, which was that the social media networking gadgets were to enable flow of information from the head office to the team on the worksite.

Detailed specifics of this study revealed interesting facts to assess how the construction industry uses social media. The specifics center on finding out a tangible reason to conclude that social media play a role or not in the construction industry. Some participants did not foresee that their companies will be using social media in the future. The opinion was that they decided to be off the social media radar, and they wanted to be "known as the Largest Company/General Contractor that nobody has heard of." This study found that the driving force to take this position was due to corporate visibility problems and challenges. The problem as noted was the issue of frivolous lawsuits; "people will sue over anything" was cited as a predominant reason.

This study did not note from the participants that their companies have evidence to justify investing on social media conversations. They believed that there is no Return on Investment (ROI) to justify engaging in social media conversations; however, Washed, one of the participants, contended that there might be a positive record somewhere nationally. Interestingly too, the study noted from the participants that social media have not impacted their companies any way positively or otherwise. This revelation was in agreement with the previous findings, that many construction project clients do not base their decision on social media conversation in awarding a contract project; hence no clear incentive to participate fully in social media conversation as noted from the study participants (Erin, 2011; Willard, 2013).

During employee selection, it was noted from the study interview that the construction industry does not engage in social media personal profiling of job applicants. All the participants reiterated that their companies resolved to do normal background check devoid of the applicant's

social media profile. Majority of the study participants developed nonresponsive posture as each struggled to comment further on the issue. Nevertheless, two of the participants opened up and was straight to the point by commenting that:

Social media has a huge potential to create negative perceptions and feedback, which is something [our company] wants to stay away from; hence the limited exposure. [Our company] intends to stay observed by its ability to build buildings as an organization, and not how we are observed on the social media that can accept negative commentary/comments from opinions of antagonists.

The above revelation supported the findings by other writers and/or researchers as noted in the literature review. For example, Willard (2013) wrote in her blog that the fear of getting into the unknown and how to initiate a conversation were the reason why some construction companies decided to stay on the fence away from social media conversation. Also the undertone inferred from the statement above buttressed what Schloser (2005) stated that, “when the opinions on a website are very negative, consumers will adapt their opinion downwards,” (as was cited by Vries, Gensler, and Leeflang, 2012, sect. H6b). According to findings some construction companies took the observatory posture on social media conversation because of the perception of clients regarding social media conversations. In a white paper titled "The Client's Use of Social Media and Social Networking" documented on Engineering News-Record. The white paper stated that, "Many of our AEC (Architects, Engineers, and Contractors) clients are not using social media in the decision making for construction-related projects, but rather as a communications and PR tool," (Erin, 2011, para 12).

The study participants highlighted a lot of detail on how their companies use social media for construction knowledge management. The researcher noted one thing unique and common

with all the participants. The commonality is that each company has adopted a knowledge management method that would not allow their competitors to easily spy on their competitive advantage skills. This finding resonates with what Elefant (2011) regarded as protecting corporate trade secret. Elefant noted that the corporate trade secret is the backbone of corporate competitive advantage and caution that, “Twitter or Facebook encourages employees to let their guard down and casually share information without thinking twice” (2011, section, trade secrets para. 2). Hence, the participants narrated how their companies use internal monitoring system (company intranet) and monthly/weekly project update meetings where collection of notes and pictures are shared among meeting attendees. This also resonates with previous findings that corporate intranet social media are used by corporate organization to control corporate messages and information (Korschun & Du, 2012).

Also there was one other interesting thing that this study found, which contradicted part of the previous researcher on employee social media needs. Recall that it was noted during the review of literature that younger employees ranked their social media needs very high as one of the things that they want their employer to satisfy. It was very interesting to note from the study that corporate decision overrides employees’ wishes regarding social media conversation.

5.3 Conclusions

This research was conducted to investigate the role and/or influence of social media towards achieving the following project objectives:

- Use of social media at the design phase (pricing negotiating across trades).
- The role of social media in resolving project related crisis.
- The role of using portable social media network on the site.
- The role of social media in team/group project.

- The role of social media in promoting innovation in the construction industry.

The study hardly found enough evidence to the contrary of the findings of previous researchers. It was noted earlier through the literature review that construction industry is lagging behind other industries in using social media. The study findings show that social media is very important to the success of an organization in this age and time. However, it was also found that the industry was actually lagging behind in using social media conversation technology. Consequently, the industry does not use social media to educate the public on the areas of their specialties, apart from few blogs from very few companies. Some companies only use social media to announce company awards and few other things that majority of the general public might not be interested in.

It could also be concluded that construction industry is not fully utilizing the social media reach advantage. Based on the findings of this study, it could also be argued that few construction companies that use social media use LinkedIn mainly for contact purposes. Thus, no evidence that the construction industry is using social media to engage consumers in conversations; thereby showing little creativity when compared with other industries as shown in figure 4 below.

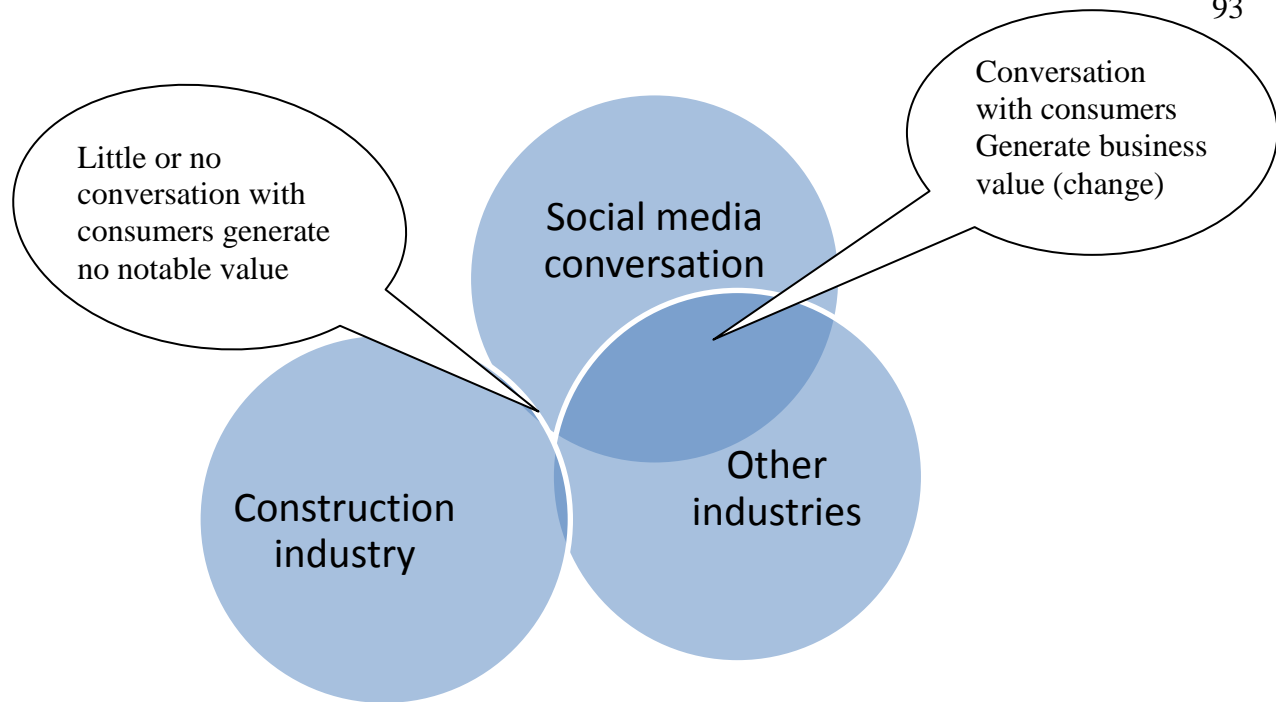


Figure 4. Model of creativity through social media as designed by the researcher

It was noted in the study, that the construction industry is not actively participating in the social media conversation. This was also evidenced in the literature review; in her blog Burgin lamented that not many construction companies are participating in social media conversation (n.d.). In some cases according to the study participants some social media sites are either shut off from the corporate machine or the management decided to implement a corporate policy warning employees not to access them from corporate machines. It was also evident from the study that construction industry prefers LinkedIn because according to the study participants, LinkedIn has construction industry specifics; literature review showed that different social media sites have certain unique functionality. This is also in line with the finding from the literature review; that construction industry is saddled with uniqueness that is peculiar to it.

Based on the findings of this study, it can be further argued that many construction companies are toeing the path of sit and watch posture as social media conversation rages like wild fire. Also, it can be concluded that many actors in the construction industry have “stay-away” mentality regarding social media conversations and engagements. No evidence that any of

the study participants advertise anything on the social media sites apart from contact information and qualifications. This conclusion was reached based on the following triangulation done by the researcher.

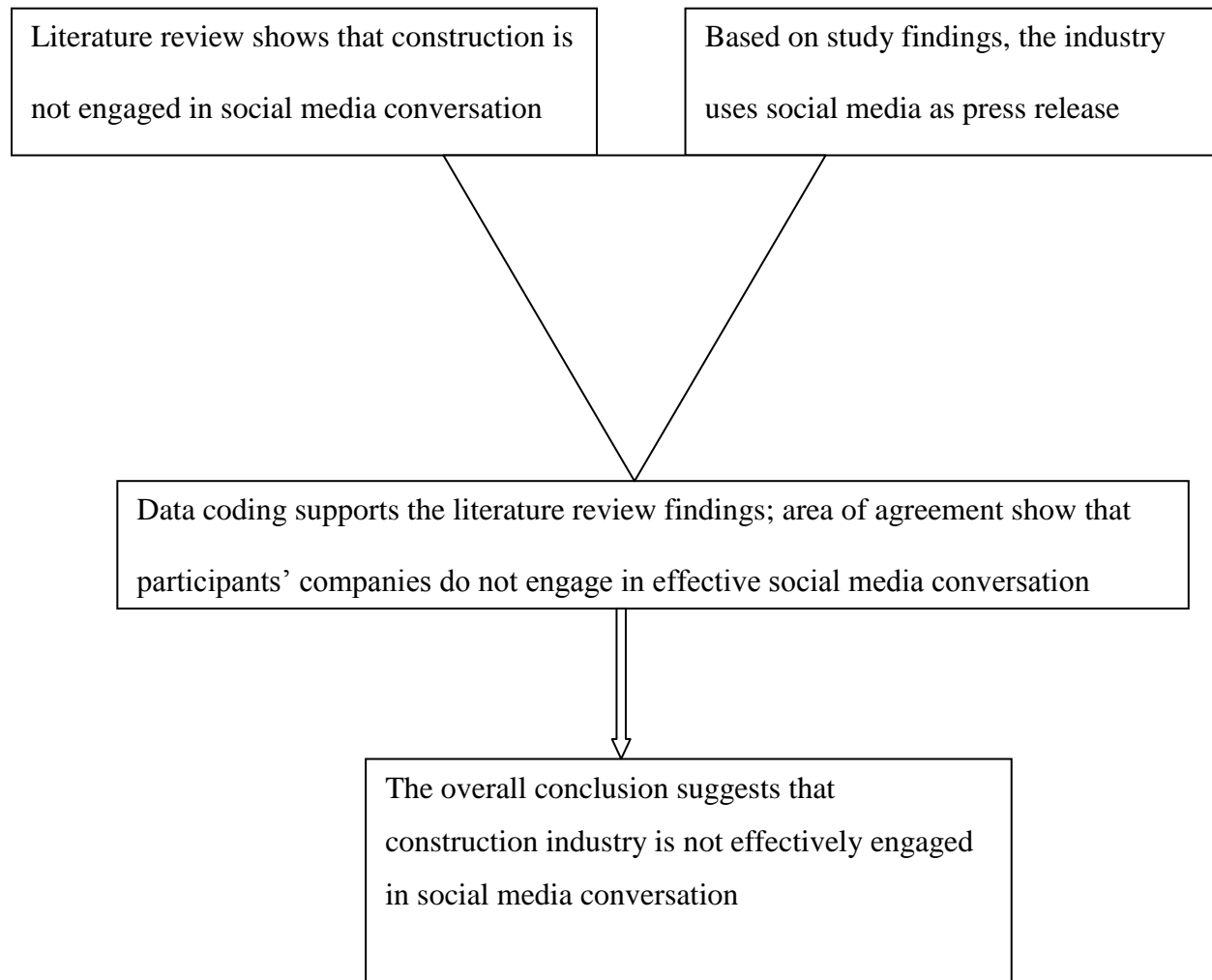


Figure 5. Triangulation of study findings

5.4 Recommendations for Future Studies

After careful review of the data collected during the interview and the review of literature, there appeared to be some gray areas that deserve further investigation. These areas of

concern include where participants could not give a definite answer despite follow-up questions for more explanation and the study's limitations. The areas are:

1. How construction industry can effectively apply social media digital technology to engage the consumers.
2. What can be done to increase construction industry participation in social media digital conversation?
3. How to modify social media site to accommodate construction industry's uniqueness.
4. Explore ways social media digital technology could enhance employee training in the construction industry.
5. Analyze construction industry setbacks in applying modern communication technology in project delivery.
6. Social media use in the construction industry: Perceived advantages and disadvantages.
7. Relationship and communication intricacies between the stakeholders on the social media.
8. The legal ramifications of denying or employing a job applicant with unprofessional social media personal profile.

References

- Abrahamse, J. and Lotriet, H. (2011). Towards an understanding, Through Action Research of the socio-organizational issues impacting on mobile Technology Adoption and diffusion within a small-to-medium South African Construction Company. Springer Science +Business Media.
- Alexa, (2010) Top sites: The top 500 sites on the web. Retrieved on March 24, 2013 from <http://moz.com/top500>
- Amin, M., William, G., & Joseph, P., (1999). Management (methods) Corporate image (Management). *Advances in Competitiveness Research. Journal* 7(1).
- Anonymous, (2011). German Workplaces Ban Social Media. *Journal of Information Management* Vol. 45.1 (15)
- António, M., Frank, H., & Harry, B., 2013. Empirical validation of Metcalfe's law: How Internet usage patterns have changed over time. *Journal of Information Economics and Policy.* Vol. 25(4), p. 246-256
- Archer-lean, C., Pavitt, H., (2012). Politics and Ethics in Social Media. *Journal of Social Alternatives* Vol. 31(2)
- Arno, C. (2012). Worldwide social media trends in 2012 search. *Eng. Watch.* Accessed on April 5, 2013 from www.searchenginewatch.com/article/2167518/worldwide-social-media-usage-trends-in-2012
- Avery, E., Lariscy, R., Amador, E., Ickowitz, T., Priimm, C., & Taylor, A., (2010). Diffusion of social media among public relations in health departments across various community population sizes. *Journal of public relation research*, p. 217-238

- Berthon, P., Pitt, L., McCarthy, I., & Kates, S. (2007). When customers get clever: Managerial approaches to dealing with creative consumers. *Business Horizons*
- Biloslavo, R., Trnavčević, A. (2009). Web sites as tools of communication of “green” company. *Journal of management history*, vol. 47(7).
- Bolino, M., Kacmar, M., Turnley, W., & Gilstrap, J. (2008). A multi-level review of impression management motives and behaviors. *Journal of Management*, 34, pp. 1080-1109.
- Bowden, S., Dorr, A., Thorpe, T., & Anumba, C., (2006). Mobile ICT support for construction process improvement. *Automat Constr.* Vol. 15, pp. 664-676.
- Boyd, D., and Ellison, N. (2008). Social network sites: Definition, history and scholarship. *Journal of computer-mediated communication*, p.210-230.
- Burgin, R. (n.d.). How care construction companies using social media? Blog retrieved on Feb. 7, 2013 from <http://www.e-plastics.com/blog/how-construction-companies-are-using-media/>
- Craig & Sommerville (2006). Information management systems on construction project: Case reviews. *Record management journal*, 16(3), p. 131-148.
- Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage
- Crittenden, V., Peterson, R. & Albaum, G., (20110). Technology and business-to- consumer selling: Contemplating research and practice.
- Dey, L., Haque, M., Khurdiya, A., Shroff, G (2011). Acquiring Competitive Intelligence from Social Media. Retrieved on Nov. 28, 2013 form <http://people.cs.uct.ac.za/~kcrawford/socialMedia.pdf>.

- Eastman, M., Teicholz, P., Sachs, R., & Liston, K., (2008). BIM handbook: A guide to building information modeling for owners, managers, designers, engineers, and contractors, Hoboken, N.J: Wiley Publishing
- Eckhar, A., Laumer, S., Weitzel, T. (2009). Who influences who? Analyzing workplace referent's social influence on IT adoption and non-adoption. *Journal of information technology* 24:11-24
- Elefant, C., (2011). The "POWER" of social media: Legal issues & best practices for utilities engaging social media. *Journal of Energy law* Vol. 32.1 p. 1-56.
- El-Saboni, Aouad, G., & Sabouni, A. (2009). Electronic communication system effects on the success of construction projects in United Arab Emirates. *Journal Advanced engineering informatics*. Vol. 1, pp. 130-138.
- Elsbach, K., Sutton, R., & Principe, K. (1998). Averting expected challenges through anticipatory impression management: A study of hospital billing. *Journal of Organizational Science*, 9, p.68-86
- Erin, J. (2011). Hashtag This: Social Media Risks and Rewards in Construction. Retrieved on Feb. 13, 2014 from http://enr.construction.com/technology/information_technology/2011/1020
- Fournier, S. & Avery, J., (2011). The uninvited brand. *Business Horizons*, 54(3), p. 193-207
- Garretson, R. (2008, p. 12). Future tense: The global CMO. Retrieved on Jan. 23, 2013 from <http://www.slideshare.net/Management-Thinking/future-tense-the-global-cmo>
- Gotta, M. (N.d.). Consumer SNS. Retrieved on Feb. 2, 2014 from <http://mikeg.typepad.com/.a/6a00d834515a5969e20153936080ff970b-pi>

- Hanna, R., Rohm, A., & Crittenden V., (2011). We are all connected: The power of social media ecosystem. *Business Horizons journal* Vol. 54, pp 265 _ 273
- Hansen, D., Schneiderman, B., & Smith, M., (2011). Analyzing social media networks with NodeXL: Insight with the connected world.
- He, W., Zha, S., and Li, L., (2013). Social media competitive and text mining: A case study in the pizza industry. *International journal of information management*.
- Howe, N. & Nadler, R. (2012). Lifecourse Associates: White Paper. Retrieved Feb. 25, 2013 from <http://www.lifecourse.com/service/generations-in-the-workforce/whit-paper.html>
- Huang, J., Baptista, J., & Galliers, R., (2012). Re-conceptualizing rhetorical practices in organizations: The impact of social media on internet communications. *Journal Information & Management*
- Jacob, S. (2012). How to become a social media superstar. *Building and Construction Trade journal*, 48, 6.
- Jue, A., Marr, J., & Kassotakis, M, (2010). Social media at work: how networking tools propel organizational performance. Jossey-Bass An Imprint of Wiley.
- Kaplan, A., and Haenlein, M., (2010). Users of the world, Unite! The challenges and opportunities of social media. *Business Horizons*, Vol. 53, p 59-68.
- Korschurn, D., & Du, S., (2012). How virtual corporate social responsibility dialogs generate value: A framework and propositions. *Journal of Business Research*
- Laer, T., Ruyter, K., Cox, D., (2013). A walk in the customers' shoe: How attention bias modification affects ownership of integrity-violating social media posts. *Journal of interactive marketing*. Vol. 27(1), p.14-27

- Laroche, M., Habibi, M., & Richard, M., (2013). To be or not to be in the social media: How brand loyalty is affected by social media. *International journal of information management*. Vol. 33, pp. 76-82.
- Maddocks, D., (2010). Tarmac Paving the way for social media in construction. Retrieved on Feb. 7, 2013 from <http://danielmaddocks.com/2010/10/blog/tarmac-paving-the-way-for-social-media-in-construction/>
- McAlexander, J., Schouten, W., & Koenig, F., (2002). Building a brand community. *Journal of Marketing*, 66(1), pp. 38-54
- Neuman, W. L. (2011). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Boston. Allyn & Bacon.
- Linjuan, M., & Wan-Hsiu, S. T., (2012). How companies cultivate relationships with publics on social network sites: Evidence from China and the United States. *Public relations Review* Vol. 38, issue 5 p. 723-730.
- Mohammed, A., Gardener, W., & Paolillo, J., (1999). Taxonomy of organizational Impression management tactics. *Advances in competitiveness research*, 7, p.108-130
- Nova Scotia Construction Sector Council, (2010). *Functional information technology _ phases 1: Detailed analysis*. Nova Scotia Construction Sector council report, Nova Scotia.
- Pauley, N., Patel, P. Mohamud, A., (n.d): *The Construction Marketer's Guide to: Social media*. Retrieved on 12-8-2013 from <http://www.pauleycreative.co.uk/wp-content/uploads/2011/05/construction-marketers-guide-to-social-media.pdf>
- Qualman, E., (2009). *Socialnomics how social media transforms the way we live and do business*. Willey John & sons, Inc., Hoboken.

- Rezgui, Y. (2007a). Exploring virtual team-working effectiveness in the construction sector. *Interact computer. Interacting with Computers. Science Direct journal*, Vol. 19 (1) P. 96–112
- Rowlinson, S., Croker, N., (2006). IT sophistication, performance and progress towards formal electronic communication in the Hong Kong construction industry. *Eng Constr Architectural Manage* 13(2)
- Safko, L., Brake, D., (2009). *The social media bible: Tactics, tools, strategies for business success.* Willey John & sons, Inc., Hoboken.
- Schniederjans, D., Cao, E., & Schniederjans, M., (2012). Enhancing financial performance with social media: An impression management perspective. *Decision support systems journal*. Vol.55, Issue 4, P. 911–918
- Smallbiztrends (2010). Which Industries are Using Social Media; And Which Social Media Do They Use? Retrieved on January 30, 2014 from <http://www.sba.gov/community/blogs/guest-blogs/industry-word/which-industries-are-using-social-media-and-which-social-m>
- Thackeray, R., Neiger, B., Hanson, C., Meckenzie, J. (2008). Enhancing strategy within social marketing programs: Use of Web 2.0 social media. *Journal health promotion practice*, 9(4), p. 338-343
- Utz, S., (2009). The (potential) benefits of campaigning via social network sites. *Journal of computer-mediated communication*, pp. 221-234.
- Vries, L., Gensler, S., & Leeflang, P., (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of Social Media marketing. *Journal of Interactive Marketing*. Vol.26(2), pp. 83-91

- Ward, A., & Ostrom, (2006). Complaining to the masses: The role of protest framing in customer-created complaint web sites. *Journal of consumer Research*, 33(2), p. 220-230.
- Willard, B., (November 11, 2011). Retrieved on February 7, 2013 from <http://www.etplastics.com/blog/how-construction-companies-are-using-social-media/>
- Zhang, J. and El-Diraby, T. E., (2011). Social Semantic Approach to support communication in AEC. *Journal of computing in civil engineering*. Vol. 26(1)
- Zyglidopoulos, S., Georgiadis, A., Carroll, C., Siegel, D., (2012). Does media attention drive corporate social responsibility? *Journal of business research*. Vol. 65(11), p. 1622-1627