Online Social Networking and employee productivity

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Throughout the history of Internet and information and communication technology (ICT) new technologies have evolved quickly and especially networked technologies have gained value from the individuals who apply these technologies. This paper reports the research findings of an investigation of the effects organisations may experience if employees are granted unrestricted access to online social networks.

Recent studies by Casella and Hanaki (2008) and Murphy and Pauleen (2007) emphasise the management need to adapt to change that results from employees' use of networked technologies. In current workplaces that rely on intellectual capital to be successful in business, employees are a key source of knowledge and mainly responsible for intellectual capital growth. It is therefore argued in this paper that organisations should critically investigate the application of technology such as online social networking (OSN) in order to support employees in the processes required for knowledge creation.

The research problem stated by this study aimed to investigate what the effect of social networking is on employee productivity within organisations and specifically within tertiary educational institutions. In addressing the research problem this paper will provide an overview of the literature review findings as well as the relevant empirical research findings with regard to what OSN entails; what the possible consequences are if employees are allowed access to online social networks without restriction; and how online social networks can contribute to the productivity of an organisation.

Introduction

Although the negative press that surrounds online social networks is valid, the opportunities that online social networking (OSN) can present to organisations should be investigated in order to make informed decisions before simply discarding this communication and collaboration tool (IBM, 2007:7; Liebowitz, 2007; News27, 2007).

Bernolak (1997:204) defines productivity as "...how much and how well we produce from the resources used. If we produce more or better goods from the same resources, we increase productivity. Or if we produce the same goods from lesser resources, we also increase productivity."

For the purpose of this study, 'productivity' will include the time spent by an employee actively executing the job he or she was hired to do, in order to produce the desired outcomes expected from the employees' job description.

As in many other organisations, employees at the University of Johannesburg (UJ) have varying skill levels regarding computer and Internet literacy. This study aimed to establish whether employees within the Faculty of Management at the UJ have previously used, are currently using, or would be interested in using online social networks in a professional environment and what effect the unrestricted use of an online social network could possibly have on the productivity of these employees.

Rationale of the study

The current popularity of online social networking is undeniable and companies have started to take notice of this fact, although scepticism regarding productivity and technological risks do widely exist. The UJ, as a tertiary education institution, has the opportunity to implement

online social networking to positively influence its employees' productivity and in future, enhance collaboration with its students as well.

This study was aimed at establishing what the opportunities and risks regarding unrestricted online social networking by UJ employees might be. It was hoped that the findings of this study could help the UJ, and specifically the Faculty of Management, understand the possible advantages of allowing employees to participate in online social networking.

Research methodology

The rationale of the study was used to determine the research methodology that was implemented. The principle aim of this study was to determine the possible effect of social networking on employee productivity within the University of Johannesburg. The next section in this paper will closely examine the research problem, research approach, the sampling of the target group, data collection and data-processing procedures.

In order to address the topics mentioned, the following research problem was formulated: **"What is the effect of social networking on employee productivity within organisations, specifically tertiary educational institutions?"**

In order to successfully address the research problem as stipulated above, the following sub-problems were identified:

- What are global online social networks?
- How does South Africa compare regarding participation in online social networking?
- What are the possible consequences if employees are allowed to access online social networks without restriction?
- How can online social networks contribute to the productivity of an organisation, specifically tertiary education institutions?
- What are the possible advantages that social networking could have for the University of Johannesburg?

For the purpose of this study, the target population was the employees of the University of Johannesburg (UJ). The accessible population, to which the findings will be generalised, is the Faculty of Management within the University of Johannesburg. In this study, a probability sample was conducted by drawing a stratified random sample, as the population was grouped according to certain elements, *viz.* gender, age and appointment type, and divided into clusters.

Data collection and data processing procedure

Creswell (2003:18) suggests that there are three approaches to research as far as data collection is concerned. The first of the three approaches mentioned by Creswell is a quantitative approach, where the investigator collects data on predetermined instruments such as experiments or surveys that yield statistical data (Creswell, 2003:18).

The second approach categorised by Creswell is a qualitative approach in which the researcher uses strategies of inquiry such as narratives or case studies to collect open-ended data with the primary intent of developing theme from this data (Creswell, 2003:18). The final approach mentioned by Creswell is a mixed method approach, which involves the researcher to collect numeric data as well as text, or open-ended data to ensure that the final database will represent both quantitative and qualitative information (Creswell, 2003:20).

In this research, Pasteur's quadrant (use-inspired basic research), which also represents the action-research paradigm, supported by a mixed method approach was incorporated. The data collection procedure followed a sequence in which exploration was followed by measurement, which was in turn followed by a qualitative analytical phase (Davies, 2007:27; Gummesson, 2000).

In conjunction with the empirical facet of this study, a comprehensive literature review was also performed to establish the theoretical background for addressing the research problem. The empirical study was carried out by performing interviews with key individuals and conducting a formal questionnaire regarding various popular online social networking sites available online and the target group's use and knowledge of these online social networking sites.
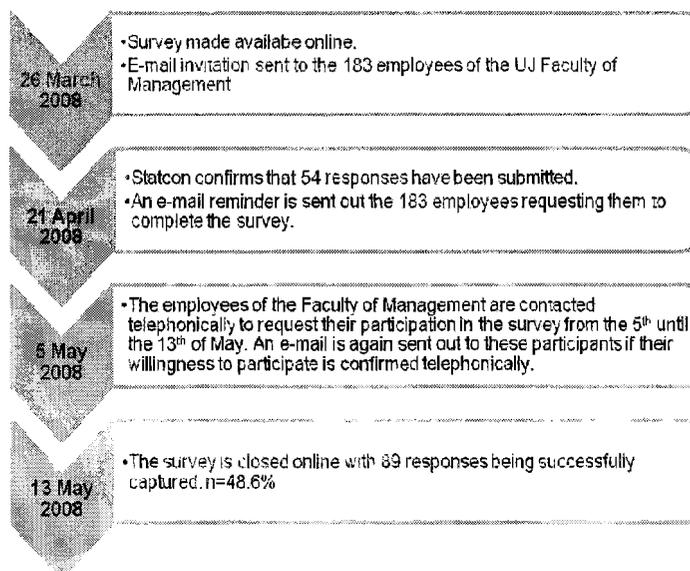
An informal poll was conducted on Facebook using the Facebook application 'Questions and Polls'. The question posed in the poll was "Can online social networks (like Facebook) help

you do your job better?" and appeared on the researcher's Facebook profile for two weeks. This poll was available to a specific list of 60 'friends' and 19 responses were received. The individuals on the 'friend' list were prompted to participate in the poll through a message sent to their Facebook inboxes.

In addition to the informal and formal polls, an e-mail interview was conducted with four UJ employees not employed by the Faculty of Management. These employees represented the UJ Information Communications Systems department, the UJ Human Resources department; the UJ Centre for Technology Assisted Learning (CenTal) and the UJ Library. A fifth e-mail interview was sent to an employee of a large South African telecommunications corporation, however, as a result of confidentiality concerns, the individual had to withdraw from the interview process.

The formal questionnaire was made available online by the Statistical Consultation Services (Statcon) of the UJ by implementing the software package 'Statpac'. The survey was accessible via a URL and an e-mail was sent to the 183 Faculty of Management employees on the 26th of March 2008, explaining the procedure to access the questionnaire and providing the survey's URL. The survey was available online to these employees until the 13th of May 2008, that is, a period of seven weeks.

During the period of availability, Statcon was regularly contacted to determine how many surveys have been submitted. The following figure illustrates the timeline of the survey life cycle, from being made available online, until closure:

26 March 2008
- Survey made availabe online.
- E-mail invitation sent to the 183 employees of the UJ Faculty of Management

21 April 2008
- Statcon confirms that 54 responses have been submitted.
- An e-mail reminder is sent out the 183 employees requesting them to complete the survey.

5 May 2008
- The employees of the Faculty of Management are contacted telephonically to request their participation in the survey from the 5th until the 13th of May. An e-mail is again sent out to these participants if their willingness to participate is confirmed telephonically.

13 May 2008
- The survey is closed online with 89 responses being successfully captured. n=48.6%

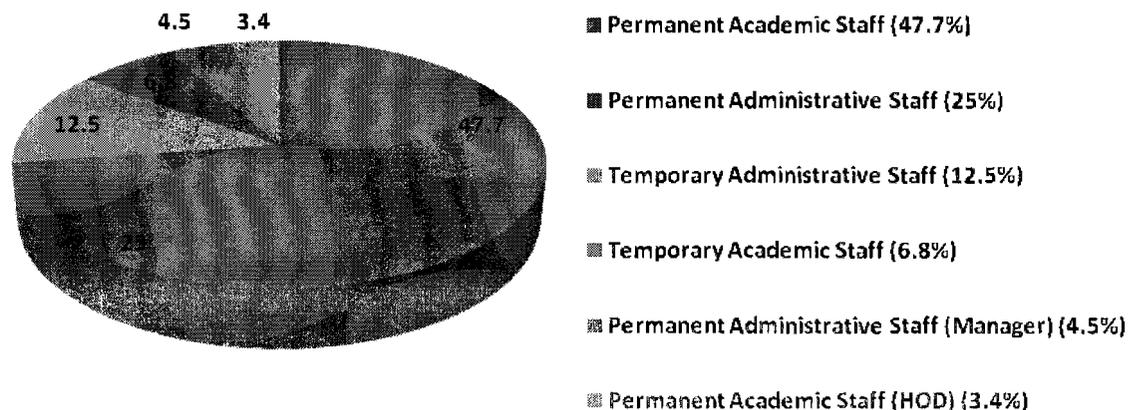**Figure 1 Timeline of the 'Online Social Networking' online survey**

After having gathered the empirical data, the online survey was processed by Statcon. Although the study focussed on qualitative and quantitative results, the following section of this paper will only be committed to a discussion of the most relevant findings of the formal online survey.

Research findings

Section A of the formal online survey requested background information from the respondents and Questions 1 and 2 focussed on the demographics of the sample group.

Question 3 under Section A aimed to determine the type of appointment of each respondent, in order to establish the level of seniority of the respondents as well as determining the focus of each respondent's position. Chart 2 illustrates the appointment levels of the sample. For the purpose of this study, emphasis was placed on four main categories of appointment,

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permanent and temporary staff members, as well as academic and administrative staff members. The findings of this question are relatively self-explanatory and are illustrated in Chart 2.
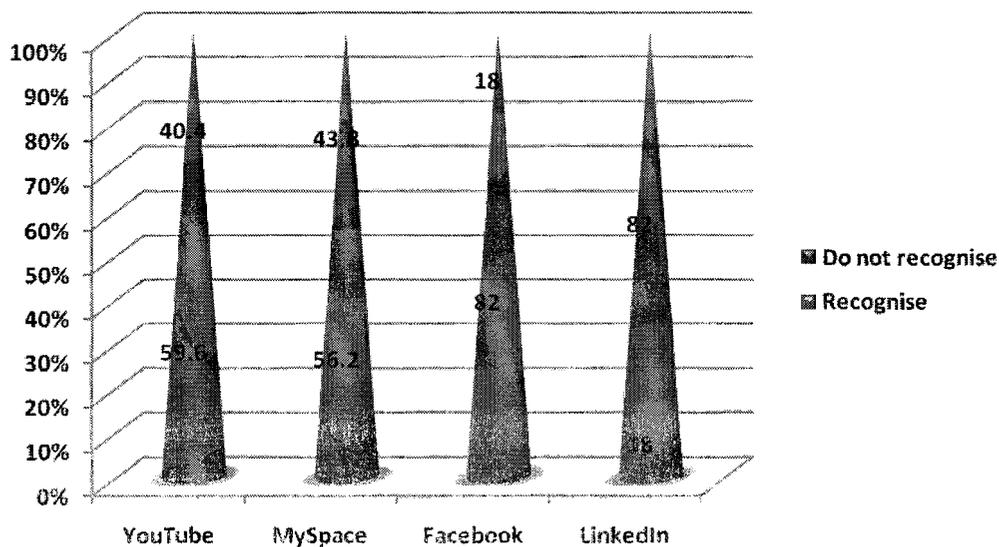

■ Permanent Academic Staff (47.7%)

■ Permanent Administrative Staff (25%)

▦ Temporary Administrative Staff (12.5%)

▦ Temporary Academic Staff (6.8%)

▦ Permanent Administrative Staff (Manager) (4.5%)

▦ Permanent Academic Staff (HOD) (3.4%)

Chart 2 Nature of appointment

Section B of the formal online survey explored the habits and preferences of the respondents towards online social networking. This section was dedicated towards establishing whether the respondents use online social networks, how much time they spend if they do engage in online social networking and what their opinions and preferences regarding this technology are.

Question 4 under Section B of the formal online survey prompted respondents to select all the names of the given online social networking sites that they recognised. This question was included in the survey in order to establish the respondent's familiarity with online social networking sites. The four sites mentioned in the list provided were YouTube, MySpace, Facebook and LinkedIn.

As portrayed in Chart 3, 12.4% of the sample did not recognise any one of the four popular Online Social Network sites mentioned in the question. Facebook proved to be the most recognised site with 82% of the sample's respondents indicating that they recognised this site's name. LinkedIn was the least recognised site within this sample, with only 18% of the respondents indicating that they recognised this site. YouTube and MySpace seem to be similarly popular as 59.6% of the respondents recognised YouTube and 56.2% of the respondents recognised MySpace in the list of online social networking sites.

100% 90% 80% 70% 60% 50% 40% 30% 20% 10% 0%

40 | 18 | 43 | 82 | 59 | 56.2

Do not recognise
Recognise

YouTube   MySpace   Facebook   LinkedIn

Chart 3 Recognised online social networking sites

The likelihood of the respondents visiting the mentioned online social networking sites and if they did visit any of these sites at all, was determined by Question 5. Within this sample, 55.2% of respondents indicated that they do visit the mentioned online social networking sites, whereas 44.8% of the respondents acknowledged that they do not visit online social networking sites at all.

Question 6, under Section B of the formal online survey, aimed at determining the frequency of visits to online social networking sites by the respondents that indicated that they do in fact visit online social networking sites.

The frequency of visits by the respondents to the four sites provided is illustrated in Chart 4. As with the previous questions, respondents had the option to indicate whether they visited any other online social networking sites not featured on the list. As was observed in the findings of the previous questions, none of the 'other' sites mentioned by the respondents were online social networking sites, but rather general Social Web sites, viz. Blogspot, Flickr, Skype. However, these findings are of value to this study and are therefore included in the discussion that follows.
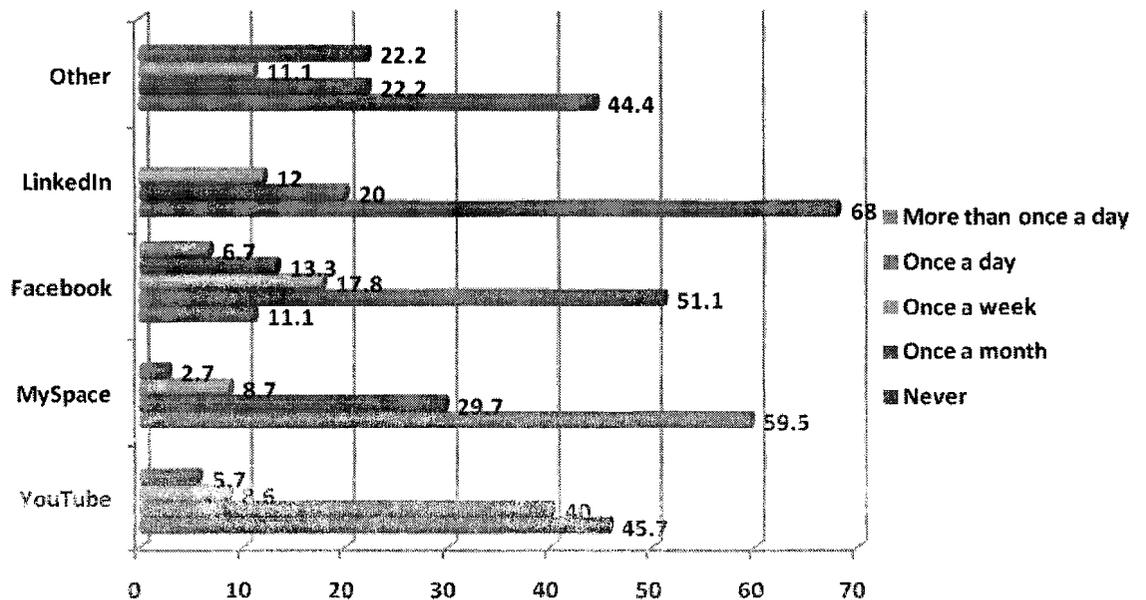
**Chart 4 Frequency of visits to online social networking sites**

With regards to the frequency of visits to the mentioned online social networking sites, respondents indicated that of the four sites mentioned, Facebook was the site most frequently visited with 6.7% of the respondents visiting this site 'More than once a day'.

The contrasting nature of different online social networking sites, such as the social focus of Facebook and the business focus of LinkedIn, may contribute to the respondents within this survey preferring Facebook to LinkedIn. Taking the statistics illustrated in Chart 4 into consideration, it may be considered that the respondents within this sample do not currently apply social networking technologies to conduct or advance their business or daily functions, as the most popular of the online social networking sites is a site not particularly aimed at business professionals.

The results shown in Chart 4 indicate that 51.1% of the respondents visit Facebook once a month, 17.8% of the sample group visits Facebook once a week and 13.3% of the sample group visits Facebook once every day. From these results, it is assumed that a rather large section of the sample was either willing to visit an online social network on a daily basis, or on weekly intervals, signifying an opportunity of virtual interaction within the organisation. If these individuals are visiting an online social network once a day, they might be encouraged to visit a similar virtual network aimed at their organisation in particular.

Under Section B, Question 7 aimed to establish whether the respondents who accessed online social networks did so more often from their office computer, indicating that these online social network visits were most likely done during office hours; or from home, Internet cafes or via their cell phones. Within this question, respondents had the opportunity to select more than one option.

The results, depicted in Chart 5, showed that 66.7% of the sample group visited online social networking sites from the office, while 58.3% of the respondents visited online social networking sites from home. Cell phone access and Internet Cafes proved to be the less popular method of accessing online social networking sites, with 25% of respondents indicating that they visited online social networking sites via their cell phones and 10.4% accessed these sites from Internet cafes.
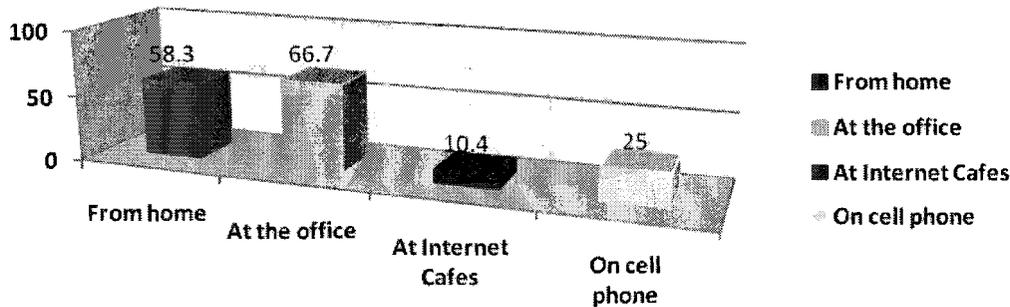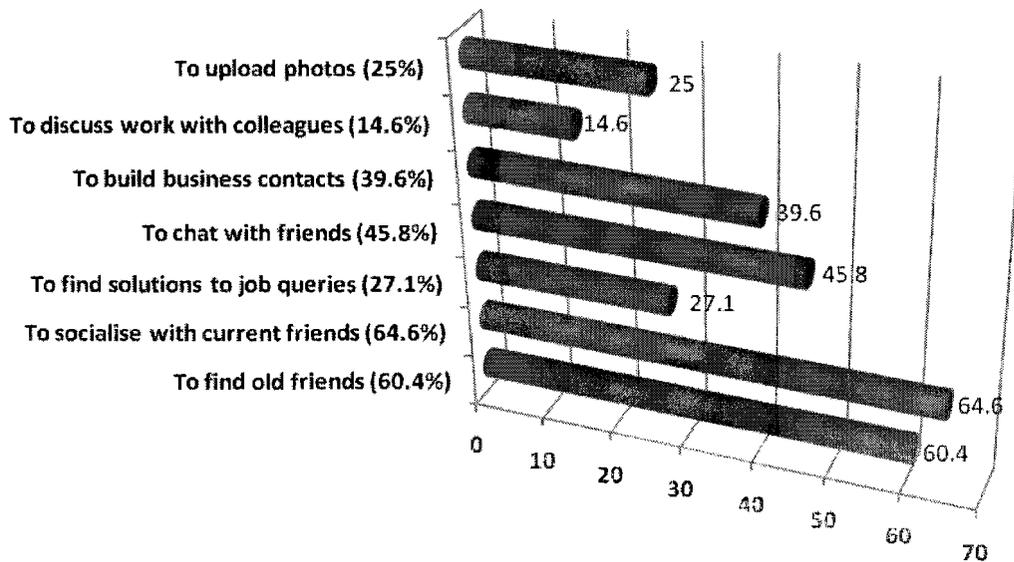
Chart 5 Access to online social networking sites

It has been noted in the discussion of previous questions within this survey that the sample group are not necessarily correct in their regard of what constitutes an online social network. The fact that 66.7% of the respondents in the sample group visited online social networking sites during office hours may indicate various elements:

- Condon (2007:1) also notes that Web 2.0 technologies, such as online social networks, have the potential to boost performance if a company's workforce is well-trained. Condon (2007:3) argues that, if faced with suffocating policies, young knowledge workers will leave a restrictive company to work in an environment that "more closely matches the way they run the rest of their lives". Within this sample, it is evident that a curiosity and willingness to participate in online social networking technology does exist. The potential that exists within this group should subsequently be harnessed.

- Risks such as secondary data collection, social networking spam and corporate espionage may be heightened if employees are visiting these sites from their office computer (Sophos, 2008; KPMG, 2007). According to the survey results, this is the case with 66.7% of the respondents.

- Social capital can be enriched through online social networking, by enhancing the external structure of the company, as categorised by Sveiby (1997:11). With 66.7% of the respondents in this sample visiting online social networking sites during office hours, the opportunity to enhance the branding of the University through its employees does exist.

The purpose of this study was to ascertain what effect online social networking may have on employee productivity. A reliable indicator of whether online social networks are currently applied for work-related purposes by the respondents within this sample group was their response regarding their utilisation of online social networking sites. Question 8 of the online survey prompted respondents to indicate what they used online social networking sites for and Chart 6 exemplifies the responses as given by the sample group. As was the case in Question 7, respondents had the option to select more than one preference.

To upload photos (25%)
To discuss work with colleagues (14.6%)
To build business contacts (39.6%)
To chat with friends (45.8%)
To find solutions to job queries (27.1%)
To socialise with current friends (64.6%)
To find old friends (60.4%)

25
14.6
39.6
45.8
27.1
64.6
60.4

0 10 20 30 40 50 60 70

Chart 6 The utilisation of online social networking sites

The sample group indicated that socialising with friends was the most popular reason for visiting online social networking sites, with 64.6% of the respondents selecting this as their main reason for visiting online social networking sites. The discussion of work-related issues with existing colleagues was the least selected option, with only 14.6% of the sample group indicating that this is one of the main activities they engaged in when visiting an online social network. This does not reflect well on the influence of online social networks of employee productivity, as it does not seem that this sample group applies their access to online social networking in a work-related manner.

Within this sample group, 64.6% of the respondents agreed that they use online social networking sites to socialise with current friends and 60.4% of the respondents indicated that they use online social networking sites to find old friends. From these results, it was inferred that the sample group's current main purpose for using online social networking sites was for social interaction rather than using online social networking sites for business purposes. The assumption is made that, at this point in time, the most value that is added to the respondents' daily lives, regarding online social networking sites, happens on a social level. One explanation may be that this market has not yet realised the potential value that online social networking sites may add on a professional level.
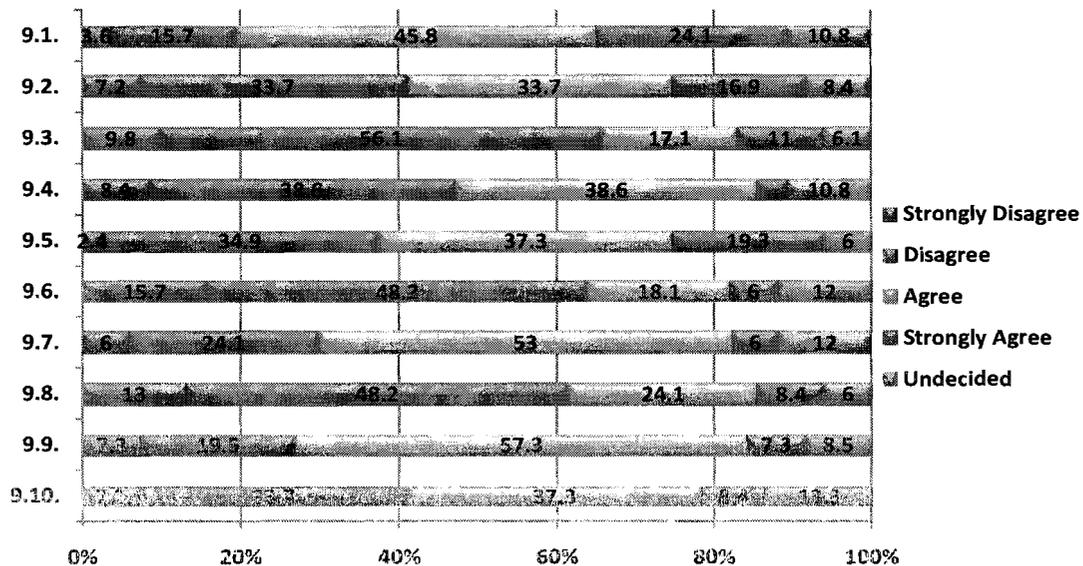
The last section of the formal online survey, Section C, was aimed at determining the attitudes and perceptions of the respondents towards online social networks. Question 9 consisted of ten statements which respondents had to rank by indicating their choice on a Likert scale. Respondents had to indicate whether they strongly disagreed, disagreed, agreed, strongly agreed or were undecided regarding each statement. This Likert scale method therefore assessed the degree to which respondents agree or disagree with each statement. These questions were aimed at determining the sample group's attitude and perceptions regarding online social networking in a number of instances and were formulated as shown in Table 1. Only the most relevant findings of the questions shown in Table 1 will be discussed in the following section.

9.1	OSN encourages people to share knowledge and expertise.
9.2	OSNs lower the productivity of employees.
9.3	I have to have extensive knowledge about Internet applications to participate in OSNs.
9.4	OSNs contribute to the intellectual capital of an organisation. (Intellectual capital is people's knowledge that can be exploited for financial gain or any other useful purpose that might be advantageous to a company or cause).
9.5	OSN sites are addictive (Meaning that these sites may negatively influence the way you normally function to an extent that is detrimental to you).
9.6	OSN sites should be blocked by a company's IT department.
9.7	OSNs encourage innovation through collaboration.
9.8	OSN is a tool designed for teenagers and students.
9.9	Using e-mail is just as effective as participating in OSNs.
9.10	An organisational OSN, specifically aimed at UJ personnel, will allow me to perform my day to day work functions more efficiently.

Table 1 Questions 9.1 to 9.10 of the formal online questionnaire

As noted previously, this section of the questionnaire aimed to establish the attitude and perceptions of the sample group regarding online social networking in their professional environment. In the first sub-question of this section, Question 9.1, respondents were prompted to give their opinion on the probability of online social networking encouraging the sharing of knowledge and expertise between users.

The results showed that 45.8% of respondents agreed and 24.1% of respondents strongly agreed that online social networking encourages people to share knowledge and expertise. The sample group's responses are illustrated below in Chart 7. This attitude of perceived enhanced collaboration is resonated in the results of Question 8, where 27.1% of the respondents indicated that they utilise online social networking sites to find solutions to job related queries, thus forming a virtual community of practice where members share work-related knowledge.

Chart labels (vertical axis): 9.1., 9.2., 9.3., 9.4., 9.5., 9.6., 9.7., 9.8., 9.9., 9.10.

Legend:
■ Strongly Disagree
■ Disagree
■ Agree
■ Strongly Agree
■ Undecided

Horizontal axis: 0% 20% 40% 60% 80% 100%

Approximate values shown in bars:
9.1. 15.7 45.8 24.1 10.8
9.2. 33.7 33.7 16.9 8.4
9.3. 9.8 56.1 17.1 11 6.1
9.4. 38.6 10.8
9.5. 34.9 37.3 19.3 6
9.6. 15.7 48.2 18.1 12
9.7. 24 53 6 12
9.8. 13 48.2 24.1 8.4 6
9.9. 19.5 57.3 8.5
9.10. 37.3 11

Chart 7 Attitude and perception regarding online social networking related statements

The formation of these virtual communities of practice can be beneficial to an organisation and communities of practice are formed by promoting and encouraging the sharing of knowledge between individuals by allowing the formation of social networks (Bartlett & Ghoshal, 2002:38). The results of Question 9.1 indicated that the sample group recognised the value of social networks and that the respondents shared knowledge by interacting with contacts to find answers to job related queries. From these results it can be surmised that the majority of the participants within the sample group recognised the potential of online social networking to encourage knowledge sharing and that they utilised online social networking for exactly that purpose to a certain extent.

In Question 9.2, respondents were given the opportunity to indicate whether they are of the opinion that online social networks lower the productivity of employees. A surprising result was found in Question 9.2, as respondents were divided on the statement that employee productivity was lowered by online social networks. The division was found between 33.7% of the respondents who indicated that they disagreed with the notion that online social networks lowered the productivity of employees, whereas the exact same percentage (33.7%) of respondents acknowledged that they agreed with the statement that online social networks lowered the productivity of employees.

As discussed in the previous section the majority, 69.9% of respondents, agreed or strongly agreed that online social networks encouraged people to share knowledge. As mentioned, knowledge sharing leads to the formation of communities of practice, which in turn has advantages that may include decreasing the learning curve of new employees, responding more rapidly to customer needs and inquiries, reducing rework and preventing "reinvention of the wheel" and spawning new ideas for products and services (Lesser & Storck, 2001:834-839), all of which aid employee productivity.

Contrary to the notion that online social networks encourage knowledge sharing and therefore aid productivity, in Question 9.2 the majority of the respondents agreed (33.7% of respondents) and strongly agreed (16.9% of respondents) that online social networks lowered the productivity of employees. When compared, the results of these two questions are therefore ambiguous, as the majority of the sample group initially indicated that online social networking

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encouraged knowledge sharing, but in the next question the majority of respondents indicated that online social networks lowered employee productivity.

A possible explanation for this divide could be the preconceived notion that online social networking was regarded as a time wasting activity and that the sample group may have reacted on this preconceived idea as opposed to reacting on the fact that they were implementing online social networking to share knowledge, an activity that ultimately leads to increased employee productivity. The respondents of this survey therefore acknowledged the hypothetical value of online social networking, but were not convinced that this technology did not place employee productivity at risk.

The next noteworthy finding regarding the respondent's attitudes and perception which was explored was the notion that online social networks contributed to the intellectual capital of an organisation; this was explored in Question 9.4. The result of Question 9.4 showed that the majority of the sample group disagreed (38.6%) and strongly disagreed (8.4%) that online social networks contributed to the intellectual capital of their organisation, with 10.8% of the respondents remaining undecided. The majority of the sample group indicated that they disagreed with this notion. However, the percentages of respondents who agree (38.6% of respondents) and strongly agreed (3.6% of respondents) that online social networks contributed to the intellectual capital of their organisation were not exponentially larger than the percentage of respondents who disagreed with this statement. Still, the majority of respondents disagreed with this statement.

An explanation for the sample group's reaction to this question may be a lack of understanding regarding the term 'intellectual capital'. The definition of intellectual capital that was given in Question 9.4 is: "Intellectual capital is people's knowledge that can be exploited for the financial gain or any other useful purpose that might be advantageous to a company or cause". It may be possible that the respondents are not familiar with Information Management as a subject field and that the concept of 'intellectual capital' being transformed into traditional, monetary capital was not a logical progression of effects to these respondents.

In trying to gain clarity regarding the attitudes and perceptions of the respondents regarding online social networking sites, the next sub-question, Question 9.5, tested the notion whether online social networking sites were addictive. The term 'addictive' was described as follows: "these sites may negatively influence the way you normally function to an extent that is detrimental to you". The most widely held opinion of the respondents was that online social networking sites were addictive, with 37.3% agreeing and 19.3% strongly agreeing that these sites were in fact addictive.

After considering the possible threats that unrestricted access to online social networking may present, the following question subset explored a possible positive effect of online social networking. Question 9.7 tested the sample group's perception and attitude regarding the possibility that online social networking sites could encourage innovation through collaboration.

A majority of the respondents, in fact 53%, predominantly agreed and 6% of the respondents strongly agreed that online social networks do in fact encourage innovation through collaboration. This attitude was also prevalent in the KPMG survey (2007:2), where 75% of respondents agreed or strongly agreed that Web 2.0 technologies, such as online social networking technologies, will foster innovation at their organisation as employees "use it to communicate and share ideas". The sample group's affinity to the idea of online social networks fostering innovation through collaboration was indicative of a positive attitude regarding this technology. If, in future, the UJ chooses to exploit this attitude, benefits may be drawn regarding increased innovation of UJ employees.

The reaction of the sample group towards the possibility of an organisational online social network, specifically aimed at UJ personnel and allowing employees to perform their day-to-day work functions more efficiently, was tested in Question 9.10. The majority of the remaining number of respondents agreed (37.3% of respondents) and strongly agreed (8.4% of respondents) that such an organisation-specific online social network would allow them to perform their daily work functions more efficiently.

These findings show that the possibility of such an organisation-specific online social network, aimed specifically at UJ employees, will be accepted positively by the majority of respondents of this sample group. The positive attitude of the sample group towards such an

online social network should encourage further investigation into the possibility of creating an online social network specifically aimed at UJ employees, since the positive effects of communities of practice (CoP) can benefit the UJ in future.

Conclusion

Online social networks can increase collaboration between individuals through the creation of communities of practice (Bryan, Matson & Weiss, 2007; Wenger, 2004). Increased collaboration will stimulate knowledge sharing between individuals which can lead to increased productivity. However, this powerful technology should be channelled in effective ways to ensure maximum results, as there are definitely pitfalls that users may submit to if left to their own strategies.

Within the UJ Faculty of Management environment, this technology is currently mainly utilised for social interaction and not on a professional basis. However, the majority of respondents recognise that this technology, if applied in a structured way, can benefit them in the execution of their daily jobs.

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