Social Networking for Knowledge Management: Group Features as Personal Knowledge Management Tools

by
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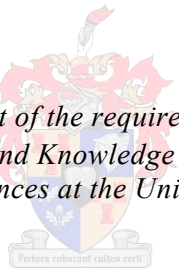

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DECLARATION

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SUMMARY

With the emergence of Web 2.0 (social network platforms) some Knowledge Management theorists saw the potential for incorporating its collaborative and networking features in Knowledge Management Systems. However, the consensus is that harnessing Web 2.0 features for Knowledge Management is still in its infancy and according to some it seems that Web 2.0 success in the social sphere is hard to translate to the work context.

The thesis argues that Web 2.0 primarily facilitates Personal Knowledge Management (PKM) and in this way indirectly contributes to Organisational Knowledge Management. Furthermore not all Web 2.0 features are equally useful in facilitating Personal Knowledge Management. The thesis identifies the group features of social network platforms as the prime locations for networking and learning.

The thesis is theoretically based on Cheong and Tsui's PKM 2.0 model, in particular the Interpersonal Knowledge Transferring phase that in turn is based on Nonaka's SECI model of knowledge conversion.

The thesis starts out with considering the distinction and relationship between Organisational Knowledge Management (OKM) and Personal Knowledge Management (PKM). Thereafter Cheong and Tsui's PKM 2.0 model is described as well as Nonaka's SECI model. The Web 2.0 phenomenon is introduced through a literature review of various studies on the usefulness of social network platforms and the group features are specifically highlighted. A survey is conducted among users of a particular Web 2.0 group feature, based on questions developed from the SECI and PKM 2.0 models.

The thesis comes to the conclusion that the group features of Web 2.0 social network platforms are useful for Knowledge Management, because it is indeed a component of users' Personal Knowledge Management.

OPSOMMING

Sekere Kennisbestuursteoretici het met die opkoms van Web 2.0 (sosiale netwerk-platforms) die moontlikheid waargeneem om die samewerks- en netwerk-funksionaliteit van Web 2.0 platforms met bestaande Kennisbestuurstelsels te integreer. Die konsensus is egter dat sulke pogings nog veel tekortskiet en sommige waarnemers meen dat dit baie moeilik sal wees om Web 2.0 se sukses in die sosiale sfeer in die werksplek in te span.

Die tesis argumenteer dat Web 2.0 hoofsaaklik Persoonlike Kennisbestuur (PKB) fasiliteer en langs hierdie ompad 'n bydrae lewer tot Organisatoriese Kennisbestuur (OKB). Verder lewer alle funksionaliteite van Web 2.0 nie 'n bruikbare bydra tot Kennisbestuur nie, maar is dit hoofsaaklik die groepsfunksies wat bruikbaar is in terme van netwerking en leer.

Die tesis is teoreties gewortel in Cheong en Tsui se PKB 2.0 model, veral die Interpersoonlike Kennisoordragsfase wat weer op Nonaka se SEKI model gebaseer is.

Die tesis oorweeg aanvanklik die onderskeid en verhouding tussen Organisatoriese Kennisbestuur (OKB) en Persoonlike Kennisbestuur (PKB). Daarna word Cheong en Tsui se PKB 2.0 model en Nonaka se SEKI model bespreek. Die Web 2.0 fenomeen word beskryf aan die hand van 'n literatuurstudie van navorsing oor die bruikbaarheid van Web 2.0 platforms en die groepsfunksionaliteit word spesifiek belig. 'n Vraelys, gebaseer op die SEKI en PKB 2.0 modelle, is onder gebruikers van 'n spesifieke Web 2.0 groepsfunksie geadministreer.

Die tesis kom tot die konklusie dat die groepsfunksies van Web 2.0 sosiale netwerk-platforms bruikbaar is vir Kennisbestuur, want dit is inderdaad 'n komponent van gebruikers se Persoonlike Kennisbestuur (PKB).

ACKNOWLEDGEMENTS

The last three years of my life I dreamt of the moment I will write these lines. To once and for all get rid of this burden. Now that I am here I have the strength to go on and on.

Thank you to my family and friends for being supportive and encouraging me when I just wanted to give up. To my father, for giving me the strength when I just could not go on. To my husband, Johnathan, for supporting me throughout especially when I could not cook for him. A big thank you to my supervisor Christiaan, for believing in me, for the guidance, the advice and your time – anytime.

Most of all, I would like to thank my Lord Jesus, for the gift of wisdom and understanding; for giving me the right words to write when I couldn't think of anything.

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GLOSSARYOF TERMS

B2B- Business to Business

CoP- Community of Practice

KM – Knowledge Management

OKM - Organizational Knowledge Management

PKM- Personal Knowledge Management

SECI- Socialization Externalization Combination Internalization

SNS- Social Networking Service

URL- Uniform Resource Locator

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CHAPTER 1

1. INTRODUCTION

Due to the widespread adoption of social media it is increasingly necessary to discover the capabilities and full potential of social media. Social media have become prevalent as a means of communication and interaction (Izquierdo, 2011:1). Millions of people around the world have integrated social media communication with their way of life (Boyd and Ellison, 2008:210). People communicate with one another across the globe using the capabilities of social media. Ever since the launch of Facebook in 2004, various other social media have emerged such as Myspace, Twitter, Tumblr and Instagram to mention a few (Social media writer, 2012). Individuals are involved in content creation and sharing by participating in activities such as posting and commenting on the social media platform.

One of the elements that make Web 2.0 tools such as social media important to discuss is that the interactions are global as they involve people from various parts of the globe. This makes the social media content that is shared and created rich in quality as it embraces the wisdom of the crowds (Suroweicki, 2005). The knowledge that is created is high quality as it combines diverse experiences and insights from people across the globe from different cultures.

In the interim, knowledge management has also received much attention in the business sector. It is considered as a business component that gives the company competitive advantage by creating better workplaces, empowering employees and increasing the productivity of the organization (April and Izadi, 2004:15). By identifying and managing the knowledge that exists within the organization or that can be brought into the organization, a business becomes better equipped to address its weaknesses and threats as well as improve its strengths and maximize on the opportunities.

Lately, Web 2.0 has been considered as a useful tool for knowledge management because of the knowledge creation and sharing that takes place on these platforms. Some studies (Panahi, Watson and Partridge, 2012:1095; Steininger, Ruckel, Dannerer and Roithmayr

2010:13-30; Abidi, Hussini, Sriraj, Thienthong and Finley 2009:287), suggest that Web 2.0 tools are useful in knowledge management. As a result of the findings of these studies, some organizations have embraced social networks as their knowledge management tools. Other organizations have however, been sceptical to adopt Web 2.0 because it is not clear whether Web 2.0 is just a buzzword (Stenmark, 2008).

Web 2.0 is mainly personal because of the individual participation that takes place there. The Web 2.0 platform empowers the individual because the activities on Web 2.0 are highly personal where the individual is the major contributor. It is therefore necessary to focus on the individual and the part of knowledge management that places emphasis on the individual is known as personal knowledge management (PKM).

PKM is considered by some scholars as the foundation of organizational knowledge management (Jain, 2000: Martin, 2006). "PKM represents the sub-domain of knowledge management that emphasizes the crucial importance of the individual in every knowledge process, proposing a model of knowledge management focused on the individual" (Razmerita, Kirchner and Sudzina, 2009: 1023). Knowledge processes include knowledge conceptualisation, codification, utilisation, sharing and distribution, and knowledge review and monitoring (April and Izadi, 2004:63-114); and also knowledge discovery, knowledge capture, knowledge sharing and knowledge application (Becerra-Fernandez, Gonzalez, and Sabherwal, 2004:32). All of these processes require human involvement. Razmerita *et al*. (2009) draw special attention on the significance of the individual. Therefore, the individual is at the core of the knowledge management process, without the individual it is difficult to speak of knowledge management.

This thesis investigates the relationship between the social media group feature and personal knowledge management and how this in turn influences knowledge management endeavours. Social media groups are formed for individuals who have the same interests for the purpose of sharing ideas, best practises and experiences. It aims to show how the groups on social media are useful tools in personal knowledge management. It also outlines the crucial role that PKM plays in knowledge management. The thesis is largely influenced by the work of Cheong and Tsui (2010) about the roles and values of personal knowledge management in organizational knowledge management and their PKM2.0 model; and also the work of Razmerita *et al.* (2009) on the role of Web 2.0 tools for managing knowledge. The two concepts are examined but the thesis then focuses on the Web 2.0 tool, social media and in particular the groups.

1.1 Research motivation/purpose

The thesis focuses on the group feature of social media because it is a feature that highly promotes personal knowledge management. Social media has various features and tools within it but the thesis seeks to show that the group feature is a very useful feature for personal knowledge management. Several studies (Reynolds, 2007; Wodzicki, Schwammlein and Moskaliuk, 2012; Safko and Brake, 2009; Kaplan and Haenlein, 2010) look at the Web 2.0 tools as a whole, and generalize the impact of the tools. Web 2.0 is a term that was coined by Tim O'Reilly in 2004 and is viewed as a series of technologies that gives the user the power to easily add their own content and be part of a global network (O'Reilly, 2005:17). The online world or the web has suddenly become a platform where people can also participate. No longer do individuals merely read and accept published content; with Web 2.0 technologies individuals can now give their input as well for instance, making comments, adding their own views and also criticizing some of the published content.

As mentioned earlier, the Web 2.0 tools are normally viewed as a complete package. In this thesis, particular emphasis is placed on the group feature of the social media tool. The group feature is made up of individuals in the same profession or individuals with similar interests. When the knowledge or information that individuals possess is brought together in a group such as this one, a pool of knowledge exists. The knowledge shared is usually in the line of work or any other useful information which can be applied in real life situations. As individuals build their personal knowledge, so does the organization build its own knowledge base as it depends on the knowledge that resides in the minds of the individuals that are employed within the organization, "organizations depend on the contributions of knowledge workers" (Jain, 2011:1). As a user of the group feature, I benefited to a great extent from the interactions on the groups. It is amazing how the individuals in these groups readily share their knowledge. I decided to investigate if this was the general standard that individuals gain knowledge from others on the groups they belong to.

If the group feature promotes PKM, then it should follow that the group feature also promotes knowledge management since some studies have shown that PKM is the basis of knowledge management (Jain, 2011; Martin, 2006). Moreover, as mentioned earlier and as will be discussed in the following chapters, Web 2.0 is viewed as a useful tool for

knowledge management. The rise of Web 2.0 has resulted in many knowledge management efforts attempting to harness its power in facilitating interaction, cooperation and knowledge exchange. It has been found that the tools that come with Web 2.0 are structured in a way that allows users to contribute their own views, insights and knowledge on the World Wide Web. According to Schneckenberg (2009: 509), "Web 2.0 technologies have pervaded the corporate sphere where they are currently assessed as a measure to increase employee performance and to improve web-based customer services." As a result of this great influence of social media individuals and organizations need to understand how they can benefit from the use of these Web 2.0 tools. This thesis aims to show the significance of one particular feature which I consider the most useful tool for knowledge creation and sharing on the social media.

In addition to that, this thesis will also show that individuals who use social networks also belong to multiple social networks. This is largely due to the fact that they want to maintain a social presence. According to Garrison (1997:15), social presence is "the degree to which participants are able to project themselves effectively within the medium." The social presence allows an individual to be "perceived as real person in mediated communication"(Gunawardena and Zittle, 1997:9) and gain more information as there are exposed to many different people from the different networks. Therefore the individuals are able to create richer knowledge that they can apply to their organizational context.

A common perception is that social media are, as the term suggests "social" tools (Han and Lee, 2012:1); as a result social media are not really useful for organizational knowledge management but good for socializing. However, Kirchner, Razmerita and Nabeth (2009:17) argue that the individual perspective is always present in the social context since the use of Web 2.0 tools on a group level influences an individual's personal knowledge management. This thesis will show that while social networks as a whole may not be very useful to the organization, some features, particularly the group feature of social networks is useful for knowledge management. The groups within social-networks, which are the focus of this thesis, provide for personal knowledge management which is the basis of organizational knowledge management. This thesis intends to ascertain that knowledge shared on social- networks' groups is beneficial to the organization. The purpose of this research is to investigate whether the user is involved and benefiting from sharing knowledge on social network groups.

There are various studies that purport that Web 2.0 enables knowledge sharing. The following section will explore these scholarly works as they map to the purpose of the research. Cheong and Tsui (2010) conducted a study on the roles and values of personal knowledge management in organizational knowledge management and they came up with a model for PKM 2.0. The PKM model by Cheong and Tsui (2010) is designed to describe PKM better and to draw attention to how PKM leverages on the Web 2.0 concepts. However, the link between PKM and how it takes advantage of Web 2.0 concepts is not apparent in their paper. In this thesis, I will make an attempt to map the PKM 2.0 model by Cheong and Tsui (2010) with the characteristics of social network groups.

Another PKM 2.0 framework was proposed by Sondari (2013) that encompasses the various skills of PKM, the knowledge management cycle and conversion process. Sondari (2013) also emphasizes the influence of PKM on organizational knowledge management and views Web 2.0 as appropriate tools to support PKM. However, Sondari (2013) does not apply the framework to any particular Web 2.0 application but to all general Web 2.0 tool.

Peter Drucker (1973); Davenport and Prusak (1998) identified the importance of the knowledge worker in the knowledge management process. Efimova (2005) conducted a study that highlighted the knowledge worker as the core of the knowledge management process. She therefore, introduced "personal knowledge management as an approach that focuses on supporting the knowledge worker productivity by taking an actor perspective in analysing knowledge work" (Efimova, 2005:2).

Some studies concentrate on how Web 2.0 promotes organizational learning and knowledge sharing (Gordeyeva, 2010). Web 2.0 achieves this through providing the platform for individuals to combine their existing knowledge with new knowledge from experiences of other individuals. Gordeyeva's thesis comes to a conclusion that social media promotes collaboration in the organizational context. Hendriks (1999) also recognizes the importance of information communication technology (ICT) in knowledge sharing by "lowering temporal and spatial barriers between knowledge workers, and improving access to information about knowledge". Web 2.0 is an example of an ICT tool that can enhance knowledge sharing.

In addition to Web 2.0, there are other several factors that also influence knowledge sharing. Hendriks (1999) identifies organizational structure, organizational culture,

denominational segregation and motivation as some factors that affect knowledge sharing. Generally, vertical organizational structures impede the flow of knowledge as well as organizational cultures that do not encourage openness amongst employees. Trust is also an important factor that influences knowledge sharing in the organization. To sum it up, trust and the organizational environment influence the process of knowledge sharing (Gordeyeva, 2010:10-12; Hendriks, 1999:91). In the same way, the environment on social network groups influences knowledge sharing. Backstrom, Kumar, Marlow, Novak and Tomkins (2008:117-128) analyzes user behaviour on large online communities and found that there are contrasting levels of engagement on groups which depends on the size of the group. Apparently, more engagement and openness is present on smaller private groups which can be attributed to trust.

Chui, Manyika, Bughin, Dobbs, Roxburgh, Sarazzin, Sands and Westergreen (2012) conducted a survey to determine if Web 2.0 platforms are value creation tools in the organization. Their findings showed that many organizations are benefiting from the adoption of Web 2.0 technologies. This is as a result of the distinct properties of social technologies. The speed of the internet allows faster and instant interaction. The scale of the internet reaches global horizons and is cheaper to use on such technologies. The social technologies provide an opportunity for creating value mainly because of the communication and collaboration. Social media is also used for strategic marketing and business purposes. Companies use information that they obtain from the consumers feedback to improve their business products and maintain or even gain a competitive advantage. Social technologies are also used to market firms' product and to gain market intelligence. "The heaviest users of Web 2.0 applications are also enjoying benefits such as increased knowledge sharing and more effective marketing. These benefits often have a measurable effect on the business" (Chui *et al*., 2012).

In summary the literature identified on Web 2.0 focuses on the following aspects:

- Understanding the uses of Web 2.0 tools.
- Benefits of the web 2.0 tools as they were introduced on the market.
- Ways of encouraging user adoption.
- Choosing the best tools to add value to the organization.

This study is however user-centric because for there to be organizational learning it is the individual who learns; it is the individual who faces problems with the technology and finally, it is the individual who is attracted by marketing on social networks. Moreover, social-networks are mainly used by individuals on their personal capacity. "Knowledge is personal" (Kirchner *et al*., 2009:18).

The limitations of the existing literature and studies on Web 2.0 are that these studies are too generalised. They talk about all Web 2.0 technologies as a whole or the social media. This study zooms in on a feature of social media; *Group or Page or Community,* which I believe is a very useful tool in managing personal knowledge and therefore leading to knowledge management. The group feature enables the coming together of individuals who have a common interest to share their ideas and experiences. Thus it creates a Community of Practice (Lave and Wenger, 1991:64) of sort, which will be discussed in section 3.7.

The social networks that this study focuses on are LinkedIn, Facebook and Google+. The reason of the focus is because LinkedIn is largely a professional network rather than other networks that are primarily for socialization (Heights Library, 2012) and it is robust as it has been on the market for long; Facebook has a large membership base and it can be viewed as the most popular social-network platform worldwide (Carlson, 2010) and since it has also been on the market for long which makes it a stable application for users. Finally, Google+ has been selected because it is used both professionally and socially (Kosner, 2013). The other reason is that I am exposed to communities on these social network platforms. My experience on the social network communities was another motivation for this research as I wanted to find out if other users are also gaining the same experience.

Although knowledge sharing may occur on the other social networking sites, the focus on these networks would be on human sexuality and friendship. I am focussing on these because they are platform for business and academic professionals and these are promising vehicles of knowledge sharing in the knowledge economy. Facebook, on the other hand is for socializing, however it is more popular. Its popularity offers a larger audience of interaction, a global audience which influences the knowledge creation process positively.

The findings of this research will add new ideas and build some PKM 2.0 theories to the current body of knowledge. In particular, this study will provide evidence on whether the individuals that use social media group features find the group features as effective PKM tools that may result in organizational benefit. This will increase awareness and possibly increase collaboration on social-network groups.

1.2. Research Questions

This study seeks to address the following main research questions:

- How do social-networks groups promote personal knowledge management?
- In which ways can knowledge sharing activities on social network groups contribute to organizational knowledge management? ;

The above questions can be further broken down into the following sub-questions:

- What determines their choice to become a member and what is the purpose or motive of becoming a member?
- How do the individuals participate on social network groups?
- How do users view the knowledge or information that is searched or shared?
- What are the factors that motivate knowledge sharing to the users?
- How do users incorporate the knowledge that they obtain in their workplace?

To answer these research questions and sub –questions, a study of the existing literature will be conducted and a quantitative questionnaire will be rolled out as the empirical work.

1.3. Hypotheses

As I was constructing the research questions, I managed to construct a number of hypotheses which will be tested in the empirical part of the thesis.

1. Social network groups' users are involved in personal knowledge management through sharing and create their knowledge and experiences voluntarily because of trust relationships

2. Social network users harvest knowledge and insights from experts worldwide from the groups that they belong to and apply this knowledge.
3. Social network groups promote Personal Knowledge Management which in turn promotes Organizational Knowledge Management.

1.4. Methodology

The empirical research thesis is based on quantitative survey in the form of a questionnaire. The questionnaire is to be completed by persons of different geographical and demographical background. The questionnaire will be completed in the form of an online survey using Google Drive Forms. The link for the survey will be posted on my LinkedIn, Facebook, Google+ profile and also five LinkedIn groups, three Google+, communities, three Facebook groups and two Facebook pages that I have received ethical clearance from. The questionnaire will also be emailed to some of my acquaintances. The questionnaire prompts the respondent to reflect on their own use of social networks and whether or not they gain knowledge. The advantage of this questionnaire is that it is being answered by the user who has had practical experience with the social-network and therefore can provide insights into how they use it (Selltiz, Wrightsman and Cook, 1981:184). The bias is reduced as the questionnaire is completed by members of these groups whom I do not have a personal relationship with and also no incentive has been given for participation.

I will analyse the responses from participants using the data analysis tools embedded in google drive forms. The google drive forms allow one to collect a summary of responses from a questionnaire generated within Google drive in various ways. I will use the summary of responses option to analyse the data since it provides graphs and charts that help to describe and visualize the results. I will also export the results from Google drive forms to Microsoft Excel for further analysis.

1.5. Expected significance of research

It is expected that this thesis will support what previous researchers have found that indeed, knowledge sharing exists among social-networks by providing evidence from the social network platforms. It is also expected that the thesis will highlight the importance of

communities that are on the social networks in facilitating PKM. It will also show that users find benefits from knowledge sharing processes on the groups on public social networks. This insight will encourage integration of public social-networks in organizational knowledge management.

1.6. Structure of the thesis

Chapter one gives a brief overview and introduction of the purpose of this thesis. The methodology is described and also the focus and limitations of the thesis are explained.Chapter 2 provides a detailed examination and literature review of personal knowledge management and the role of personal knowledge management in organizational knowledge management. It also explores the PKM 2.0 model and the SECI model. In Chapter 3, Web 2.0 is examined with a focus on social-networks and the "group" feature of social-networks. A detailed literature review of Social-network in various industrial fields is given. Chapter 4 describes the research methodology and the questions in the questionnaire are analysed. Also the findings and results are analysed. Chapter 5 provides the conclusion of the thesis and suggestions for further study.

1.7. Limitations

The limitation of this thesis is that it does not measure the actual organizational impact of the knowledge gained from the social network. It is highly limited to social networks that have a "Groups" feature. Because of this, it neglects other social-networks that do not have the feature, but that may still be knowledge creation tools. Another limitation is the number of responses obtained which may not be truly representative as this was an attempt to determine patterns across various parts of the world.

1.8. Clarification of concepts

A *group* is a community where individuals with similar interests, profession and expertise come together to share and exchange ideas within the social-network. It is a feature within the social-network that is different from the main wall or newsfeed. Before one can access information on the group they have to join and become a member.

This thesis refers to the social networks that are found on the World Wide Web as *public social networks*, as opposed to the social networks that are intra-organisational.

Like-ing is to give positive feedback and connect with things you care about usually by clicking on the thumbs up button

Leadership 2.0 is kind of leadership where the people in authority realize the power of the knowledge of the people they lead

Groups is also referred to by using other terms in different social networks, for example on Google+ it is known as Google *community*

The *wall* is the original profile space that shows the content of the user. In this case it also includes the newsfeed and the status updates.

CHAPTER 2

2. KNOWLEDGE MANAGEMENT AND PERSONAL KNOWLEDGE MANAGEMENT

In this chapter, knowledge management and personal knowledge management concepts are reviewed. The models for knowledge conversion and PKM are illustrated and discussed. Knowledge sharing is also discussed as this is an important aspect of knowledge management. The role of the knowledge worker is also highlighted. The link between knowledge management and PKM is shown. This chapter shows how social media groups fit in PKM and knowledge management.

Knowledge management is the current buzzing trend in the 21st century also known as the knowledge economy. Various studies have been conducted in the field of knowledge management to determine its worth in the organizations and its contribution to the global economy. Becerra-Fernandez *et al.,* (2004:2) argue that, "the most vital resource of today's enterprise is the collective knowledge residing in the minds of an organization's employees, customers and vendors". It is therefore, important to tap into this knowledge from the individuals so that the organization can benefit. In the knowledge economy, which is apparent in the 21st century, the most valuable asset is the knowledge worker (Drucker, 2007:116). The knowledge worker is one who works primarily with information or one who develops and uses knowledge in the workplace. As such, the individual is mainly responsible for gaining the information and knowledge that they will in turn apply in the organizational or other contexts.

Competent and proficient knowledge workers contribute meaningfully to the success of the organization. Individuals form the organization. Individuals who are knowledge workers can influence an organization's knowledge management endeavour positively allowing the organization to have competitive advantage over its counterparts (Pauleen, 2009:222; Woods and Cortada, 1999:272).

To become an efficient knowledge worker, an individual has to take himself through a personal process of managing his individual knowledge (Jain, 2011:3). This process is also known as Personal Knowledge Management (PKM) and involves extracting and

organising an individuals' knowledge. PKM helps individuals to be more effective in personal, organizational and social environments because less time is spent in information search and retrieval. In this thesis, there will be an exploration of how Web 2.0 and social networks provide a platform for individuals to engage in a process of PKM and in turn result in knowledge sharing.

2.1 Knowledge

It is important to distinguish between data, information and knowledge since we are discussing the issue of knowledge sharing as it will show what exactly is being shared. Some may argue that is it really knowledge that is being shared on the social network groups, since data, information and knowledge are terms that are often used to mean the same thing, more so for information and knowledge. Therefore the discussion below will show that indeed it is knowledge.

Many scholars have different definitions of these terms. Davenport and Prusak (1998:1), define data as "a set of discrete, objective facts about events". Data is also described as being generated if signs are put in order under syntactical rules" (von der Oelsnitz, 2003:38). Data is normally in the form of figures or statements and does not impart anything on its own. Although data is in the form of raw facts, it does not mean it is not useful since data is the foundational source of information.

Drucker (1988:45) defines information as "data endowed with relevance and purpose". If the data can be used for a certain purpose, which means that it has become informative and is now information. Davenport and Prusak (1998:1) describe information as a message which comes from a sender and has an intended recipient, the receiver. In simple terms, data is raw facts and information is meaningful data.

Knowledge is different from data and information. Knowledge is defined by Nonaka and Takeuchi (1995:58) as justified true belief. Bercerra-Fernandes *et al*., (2004:15) add to this definition by defining knowledge as "justified beliefs about relationships among concepts relevant to that particular area". This means that knowledge is used in specific situations to be able to handle the situations better or to make better decisions. A knowledgeable person has the ability to give meaning to data so that it becomes information. In the W*orking Knowledge,* Davenport and Prusak (1998:1) define knowledge as "*a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information"*.

Professor Mathieu Weggeman of the Technical University of Eindhoven (Netherlands) has defined knowledge in a formula in Dutch which is converted in English as:
K=f (I*E*V*A) that is *Knowledge is equal to the function of Information, Experience, Skills and Attitude* (Boersma, 2004). A combination of these four elements is what gives rise to knowledge. This thesis aims to show that this is the kind of knowledge that is currently being shared and created on social-networks.

2.2 Tacit and explicit Knowledge

There are two forms of knowledge that are widely accepted by scholars, tacit knowledge and explicit knowledge. Michael Polanyi (1966) made the first distinction between tacit and explicit knowledge. Nonaka and Takeuchi (1995:8) further distinguish the two as follows:

> *"Explicit knowledge can be expressed in words and numbers and can be easily communicated and shared in the form of hard data, scientific formulae, codified procedures or universal principles."*

This type of knowledge is easy to articulate:

> *"Tacit knowledge is something not visible and expressible. Tacit knowledge is highly personal and hard to formalise. Subjective insights, intuitions and hunches fall into this category of knowledge."*

Tacit knowledge is in the mind and being of the owner and it is difficult to transfer from one individual to another. A knowledge worker amasses tacit knowledge as they accumulate years of various experiences. Explicit knowledge on the other hand is easier to transfer or to code and is largely available to anyone. Explicit knowledge can be found in an organization's knowledge bases in the form of policies and procedures, reports and information systems.
The individuals on the social network groups have tacit knowledge from their individual experiences in different environments. The platform allows this tacit knowledge to be made explicit to others by posting and commenting. If one does not understand they still can get clarification from the originator of the matter. When the knowledge is made explicit it can be stored in the archives folder of the group which act as knowledge repositories. Other individuals can still benefit from this knowledge in the future (Boateng, Mbarika and Thomas, 2010:19).

2.3 Knowledge Conversion

The main idea of knowledge creation according to Nonaka and Takeuchi (1995) is conversion process between tacit knowledge and explicit knowledge. The participants in this process are individuals, groups, organization and environment. The processes involved are Socialization, Externalization, Combination and Internalization. These processes are in constant interaction and are iterative until the knowledge has been created. This has been summarised in the SECI model which is in the form of a spiral as shown in *figure 1*:

Figure 1. Spiral Evolution of Knowledge Conversion and self-transcending process (Nonaka and Takeuchi, 1995: 43).

2.3.1Socialization

Socialization is whereby tacit knowledge is acquired by an individual from the experience that they go through. This is a conversion from tacit knowledge to tacit knowledge. It can

also be described as simply adding more insights to the existing knowledge that an individual possesses. This can be achieved from observations, imitating and brainstorming and interactions amongst individuals and groups (Nonaka and Takeuchi, 1995: 42).

2.3.2Externalization

This is conversion of tacit knowledge into explicit knowledge. Explicit knowledge is articulated and is expressed in words or numbers. When an individual shares their experience in the form of a dialogue or written manuscripts it is said that they are externalizing their knowledge. This knowledge that has been formalized can then be used by other individuals to clarify their mental models (Nonaka and Takeuchi, 1995: 43).

2.3.3Combination

As the term implies, it is all about combining different sources of explicit knowledge and possibly finding the relationship among the concepts presented. It is a process of converting explicit-to-explicit knowledge. The sources may include memos, emails, and existing information on databases. The sources can include social media as well (Nonaka and Takeuchi, 1995: 44).

2.3.4 Internalization

This is where explicit-to-tacit knowledge conversion takes place. The knowledge that has been acquired in this stage is classified according to relevance and preserved as a mental model. This knowledge can then be put into practise (Nonaka and Takeuchi, 1995: 45).
Michael Polanyi (1966) suggests that the tacit coefficients of articulation are:

- Nearly all knowledge by which man surpasses the animals is acquired by the use of language.
- The operations of language rely ultimately on our tacit intellectual powers which are continuous with those of the animals. These inarticulate acts of intelligence strive to satisfy self-set standards and reach their conclusions by accrediting their own success.

Clearly, to create knowledge there has to exist some form of dialogue or conversation amongst individuals that is the constant interactions between tacit and explicit knowledge.

2.4 Personal Knowledge Management

There are various definitions of personal knowledge management (PKM). Frand and Hixon (1999) define PKM as "a system designed by individuals for their own personal use…a conceptual framework to organize and integrate information so that we, as individuals, feel is important so that it becomes part of our personal knowledge base." Individuals gain knowledge then transform and use that personal knowledge in various contexts of their lives such as organizational or social contexts. In order to determine the appropriate knowledge to use in a particular context, the knowledge needs to be organized. Avery, Brooks, Brown, Dorsey and O'Conner (2001:30) describe PKM as "based on a set of problem solving skills that have a logical and conceptual as well as physical or hands on component." One of the key characteristics that exist in the PKM definitions according to Jain (2011) is that PKM is important to improve organizational productivity. The definition that fits the purpose of this thesis is that of Patrut and Patrut (2013:130);

> *"Managing and supporting personal knowledge and information to make it accessible, meaningful and valuable to the individual; maintaining networks, contacts and communities making life easier and more enjoyable and exploiting personal capital".*

In this definition, individuals are involved in activities that assist in creating, distributing, gaining, validating and applying knowledge through exploiting their own capital. Social networks are such systems that allow individuals to manage and organize their knowledge by creating contacts within a community.

Various studies have indicated that PKM is a way of increasing the individuals effectiveness in work environments and in the knowledge society (Pauleen and Gorman, 2011; Efimova, 2005; Chatti, 2012). Peter Drucker can be seen as the initiator of PKM by mentioning the term "knowledge worker" as early as 1959. Davenport and Prusak (1998) pointed out that much of the organizational knowledge resides in the minds of the employees who work in the organization. As such it is as a result of the constant interactions and collaboration that will result in knowledge creation. Individuals are exposed to new knowledge and they are able to integrate this new knowledge with their own existing tacit knowledge.

Efimova (2005:1) on PKM suggests that it is an approach that complements organizational KM by focusing on ways to support productivity of an individual knowledge worker. She argues that the personal aspect of KM is crucial in order to have a successful KM program. She identifies the Web 2.0 tool, blog to be particularly useful for both the knowledge worker and the organization for personal productivity and integrating KM initiatives. Because of the rise of technology and the information overload, it is important for individuals to manage their knowledge. Clearly, Web 2.0 offers that platform according to the study conducted by Efimova (2005:4). It is important that individuals should be responsible for their growth and learning (Verma, 2009:437). Knowledge acquisition includes socialization and individual thinking. This is true for Web 2.0 because on a social networking platform an individual is exposed to vast amounts of knowledge through socializing with others and then they have the chance to reflect on the interactions and combine this with their existing knowledge.

Jain (2011:1) also asserts that "*there is a close correlation between personal knowledge management and organizational knowledge management. If individuals become productive by managing personal knowledge, the organization becomes productive.*" He makes a clear link between personal success and organizational success and outlines the benefits of PKM for both the organization and the individual. If the individual is able to manage the knowledge that they possess well enough then they will be able to contribute effectively to the organization. According to Jain (2011:3-5) this then increases productivity within the organization.

Personal knowledge belongs to an individual and can become the basis for knowledge within an organization. Avery *et al.,* (2001:30) describe PKM as a process that helps to transform information to knowledge that can be usefully applicable. PKM includes what we have learnt from formal instruction and also informally through experience. If individuals have the ability to manage their own knowledge then they can contribute effectively to organizational knowledge. PKM skills are placed under the following categories by Pettenati, Cigognini, Mangione, and Guerin, (2007:54); *create, organize, and share*. Individuals should be involved in a process of creating new knowledge that is useful to them and be able to organize this knowledge into appropriate frames or context. Finally, they should be willing to share the knowledge that they have rather than hoarding the knowledge for personal benefit. Knowledge sharing is the category that is important to the organization. If one individual shares their knowledge to several individuals then the

value of that knowledge will increase. This in turn benefits the organization since it increases its intellectual capital.

Argote (1999:74) has identified individuals as the "key repositories" of knowledge within the organization. As such the starting point of knowledge sharing is from the individuals sharing whatever knowledge that they possess. Employees are however, not always ready to share the knowledge within the organization because of various factors (Wahlroos, 2010: 25-28). Many people believe knowledge is power and their knowledge is their competitive advantage. It is therefore a challenge to promote organizational knowledge sharing.

2.4.1 Personal Knowledge Management Skills

Avery, Brooks, Brown, Dorsey and O'Conner (2001) proposed seven PKM skills as retrieving, evaluating, organizing, analysing, collaborating, presenting and securing. *Retrieving* is a skill of obtaining useful information. Information can be obtained through performing relevant searches. It can also be retrieved from informative material and media such as books, television, and internet among others. *Evaluating* is the skill of being able to derive meaning from available information sources and determining the relevance and credibility of the information. In order to apply this skill, an individual requires extensive knowledge about the subject to appreciate the value of the information (Muller-Prove, 2009). *Organizing* is a skill that allows an individual to categorize and classify information as well as placing the acquired information into frames of reference. In addition to that it involves identifying relationships between prior knowledge and novel knowledge. *Collaborating* involves individuals cooperating in a joint intellectual effort to achieve a common goal. Collaborating can work very well with the use of groupware.

The *analyzing* skill gives an individual the ability to examine and interpret the information at hand. Furthermore, it involves human cognition and conscious reasoning which requires application of an individual's intelligence coupled with intuition (Muller-Prove, 2009). *Presenting* is the art of formatting and publishing information to make it available to other individuals in a comprehensible manner. *Securing* is skill of ensuring that acquired information is stored and made accessible to the relevant individuals. It also involves protecting information by means of patents, copyrights among others.

The PKM skills discussed above are inherent in social networking groups for individuals to apply when they are participating. Within a social networking group, users should be able to retrieve relevant information, evaluate the information according to their requirements and organize the information to make it manageable. Users should also be in a position to collaborate with others to enrich their knowledge, analyse the information, present it in a format that is understandable and articulate, as well as secure the information shared.

Other scholars have also identified components of PKM. These components have been compared by Sondari (2013) in *Table 1*:

Table 1. Comparison of PKM Cycle (Sondari, 2013:427)

Dorser (2000) in Agnihotri and Troutt, 2009	Ismail and Ahmad (2012)	Dalkir (2011)
Retrieving	Get / Retrieve	
Evaluating / assessing		Asses
Organising		
Analysing	Understand / analyse	Contextualize
Presenting	Share	
Securing		
Collaborating	Connect	Update

Sondari (2013) proposed a PKM framework in relation with Web 2.0 depicted in Table 2 below. The framework proposed is based on SECI model of conversion and the PKM skills identified in table1 above. According to Sondari (2013), the process of *socialization* in the SECI model corresponds to the PKM process of *connect*. This connect process involves identifying contacts on the social network and inviting contacts among other activities. *Externalization* is where individuals *share* explicit knowledge on a Web 2.0 platform such as a blog. *Combination* is matched to the processes of retrieve, assess, *organize* and involves representing explicit knowledge on the web. The process of *internalization* is congruous to *analyze, understand and contextualize*. In this process, individuals are able to learn from the explicit resources that have been availed on the web. *Re-socialization* is matched with *update and collaborating*, where individuals work with others to upgrade their knowledge. The connection made by Sondari (2013) is on web 2.0 in general, whereas this particular study focuses on the social network groups alone.

Table 2. Revised PKM Process (Sondari 2013:428)

SECI model (Nonaka and Takeuchi, 1995)	Revised PKM process based on SECI model
Socialization	Connect
Externalization	Share
Combination	Retrieve, Asses and organize
Internalization	Analyze, understand, contextualize
Re-Socialization	Update, collaborating

2.4.2 Personal Knowledge Management Conceptual Model

Cheong and Tsui (2010) developed a framework where Web 2.0 leverages PKM known as PKM 2.0. It helps to develop the knowledge of the individuals in a network. This framework may enable maximum contribution and improvement of competencies. The framework shows how the SECI model by Nonaka and Takeuchi (1998:43), PKM skills by Avery *et al*., (2000) and PKM 2.0 are linked.

PKM 2.0 Components	Personal Information Management (PIM)			Personal Knowledge Internalization (PKI)			Personal Wisdom Creation (PWC)			Inter-Personal Knowledge Transferring (IKT)		
Skill/Competence	Retrieving	Evaluating	Organising	Analysis	Learning/Self Development	Reflection	Problem Solving	Creativity	Mental Agility	Securing	Presenting & Communication	Collaborating
DIKW Transformation Layer	Data ↔ Information			Information ↔ Knowledge			Knowledge ↔ Wisdom			Information/ Knowledge ↔ Information/ Knowledge		
Knowledge Conversation	Explicit ↔ Explicit			Explicit → Tacit			Tacit ↔ Tacit/Explicit			Explicit/Tacit ↔ Explicit/Tacit		
KM Process	Capture/Locate			Create			Apply			Transfer/Share		

Figure 2. PKM 2.0 conceptual model (Cheong and Tsui, 2010:18).

In *Figure 2*, the Personal Information Management component is where the retrieving, evaluating and organising skills are utilised. In the knowledge conversion this is equivalent to Combination in the SECI model. This is where explicit knowledge that has already been expressed is made explicit on another media (Cheong and Tsui, 2010:19).

Personal Knowledge Internalization is where the analysis skill is used; this is the Internalisation stage of the SECI model. This is where individuals take their past knowledge and merged it with the knowledge or information currently presented to them, thereby creating a new understanding and new knowledge (Cheong and Tsui, 2010:19).

Personal Wisdom Creation is where socialization and externalization takes place. Individuals use their knowledge to deal with new challenges. It mainly involves putting the wisdom into practise (Cheong and Tsui, 2010:19).

Inter-Personal Knowledge Transferring is where externalization takes place and the necessary skills are securing, presenting and collaboration. Out of the four PKM 2.0 components identified the most crucial according to Cheong and Tsui (2010:20) is the Interpersonal Knowledge Transferring (IKT). It involves collaborating and therefore sharing of knowledge which benefits others.

2.5 Knowledge sharing

Knowledge sharing is the process of communicating tacit and explicit knowledge to other individuals and it involves effective transfer of this knowledge. Knowledge sharing refers to the provision of information and know-how to help others and to collaborate with others to solve –problems, develop new ideas, or implement policies or procedures (Wang and Noe, 2010:122). Knowledge sharing has become the centre of organizational management ever since knowledge management has been accepted as a useful tool for managers (Hung and Chuang, 2009:1). If one individual only possesses knowledge within an organization and that individual becomes unavailable, then no one else will be able to utilize the knowledge that the particular individual possessed. Therefore, knowledge becomes useful if it is shared with others. It is important to have a separate discussion on knowledge sharing because knowledge needs to be distributed in order to be useful on the organizational level (Yaacob, Iskandar, Abdullah, Abdullah, Yaacob, Amin, Bakar, Noor and Azelin, 2011:34).

The most common platform to share knowledge is in a community of practice (CoP).

Communities of Practice (Wenger and Snyder, 2000) are "groups of people informally bound together by shared expertise and passion for a joint enterprise." These individuals have a similar vision and goal of expanding their insights of their area of expertise by sharing what they know and learning from others. Choi (2006:143) defined a Community of Practice as "groups of people informally bound by their shared competence and mutual interest in a given practice, which makes it natural for them to share their individual experiences and knowledge in an informal and creative way." Collaboration is the main goal of a CoP; therefore individuals are comfortable sharing their knowledge with others. When the knowledge is shared, others gain new insights. Social network groups can be viewed as communities of practise as they meet the characteristics in the definitions.

Davenport and Prusak (1998:3) describe knowledge exchange as transactions that take place at knowledge markets. These markets have buyers and sellers of knowledge and the transactions are beneficial to both. Knowledge buyers are people who bring their problems to the market to buy solutions, "insights, judgements and understanding" (Davenport and Prusak, 1998:3). Knowledge sellers are experts in the field who are reputable, therefore the buyers trust the knowledge sellers, seeing that the knowledge markets would not work without trust. The knowledge sellers in turn expect reciprocity when they are looking for the knowledge. Knowledge brokers play an essential role in the knowledge market by facilitating the transactions (Davenport and Prusak, 1998:3).

Bartol and Srivastava (2002:64) defined knowledge sharing as "a situation in which organizational members share organization-related information, ideas, suggestions and expertise with each other". This view is the one that will be used in this paper when considering the form of knowledge that is shared on the social network platforms.

Knowledge sharing is the process where individuals mutually exchange their (tacit and explicit) knowledge and jointly create new knowledge (Van den Hooff and De Ridder, 2004:118). From this definition we can derive that every knowledge-sharing behaviour consists of both bringing which could also be considered to be donating knowledge and it also consists of getting or collecting knowledge. This has been labelled by Van den Hooff and De Ridder (2004:118) as follows;

- Knowledge donating, communicating one's personal intellectual capital to others and;
- Knowledge collecting, consulting others to get them to share their intellectual capital.

From this distinction it can be established that the two are active processes—either actively communicating to others what one knows or actively consulting others to learn what they know (Van den Hooff and De Ridder, 2004:118).

Wahlroos (2010:17) defined knowledge sharing using *Figure 3* to illustrate the process of knowledge sharing. This diagram is consistent with the theories of various scholars on knowledge sharing (Van Den Hooff and De Ridder, 2004; Nonaka and Takeuchi 1995). Individuals are involved in interactive processes that involve sharing their knowledge (donating) and also obtaining knowledge from others (collecting).

Figure 3. Knowledge-sharing (Wahlroos, 2010:17).

Choo (2003:212) examined different perspectives on knowledge management and mentioned the enabling conditions of knowledge as discussed by Nonaka and Takeuchi (1995) as follows:

- Organizational intention- this is a vision shared by the members of the organization to share knowledge. In this thesis the organizational intention is that of the social-network platforms and especially the groups that are found on the social network.
- Autonomy- is the independence of the members and self-motivation to experiment and discover new knowledge. As such is the participation of users on the social networks, users driving themselves to acquire knowledge and also to share

knowledge.

- Fluctuation and creative chaos- is where habitual frameworks are disrupted to instil creativity from cognitive dissonance. In social-network groups problems are posed and various solutions proposed.
- Requisite variety of members- members should have access to a wide variety of information. On social networks there is diversity because of the geographical coverage of these networks. Therefore a variety of ideas can be gained.
- Information redundancy- availability of information to the individuals. On social-networks the information is accessible although some of it can be archived.

These enabling conditions exist within the social network group. All the members of the group have a shared vision when they join the group, that they will gain new insights and knowledge as well as share their own. They are independent and self-motivated. There is creative chaos when a new problem is presented as different opinions are presented. Members of the group work from different organizations, in different geographical regions which show requisite variety. Finally, information is readily available.

Knowledge is created when knowledge is shared among individuals (Hall, 2001: 26). Knowledge *s*haring is therefore the core of knowledge management efforts in an organization. In her thesis, Gordeyeva (2010:6) considers knowledge management as being focused in sharing explicit and tacit knowledge. Figure 4 shows the simplified model of knowledge sharing as suggested by Hendriks (1999:93).

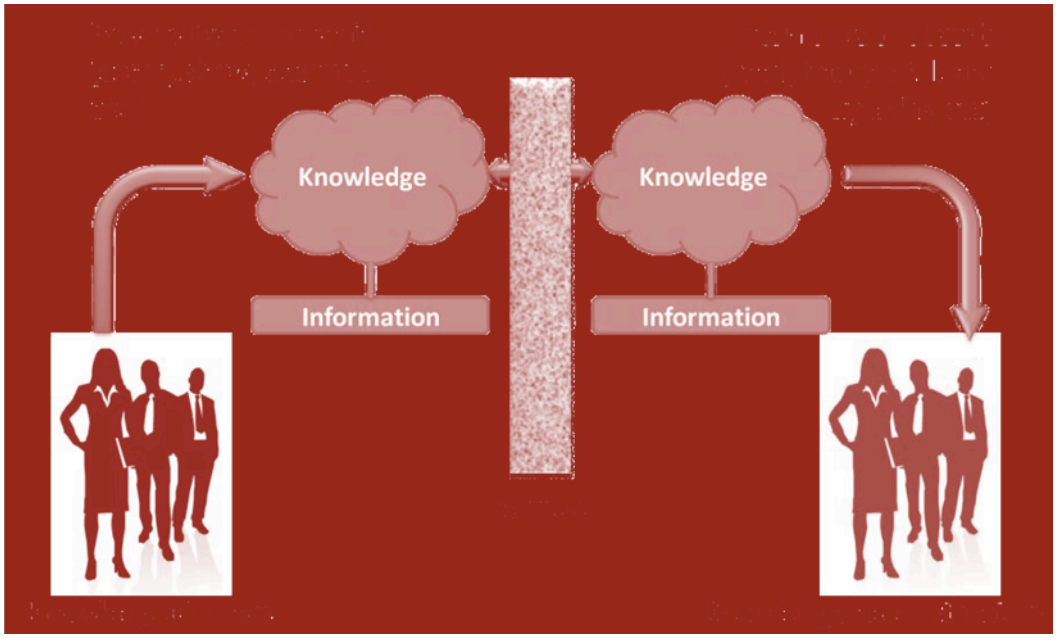

Figure 4: A simplified model of knowledge sharing (Hendriks, 1999:93)

One of the problems of knowledge sharing as outlined by Gordeyeva (2010:10) is the existence of formal hierarchies within an organization. These hierarchies pose as a barrier to knowledge sharing as they create trust barriers unlike in communities of professionals with similar specialties and interests. The professionals in a community are more likely to share the knowledge freely without fear of being judged as they consider themselves equals on the platform.

For knowledge transfer to be effective there should be transmission, absorption and change in behaviour or development of new idea. (Davenport and Prusak, 1998:8).Knowledge sharing is relevant for this thesis because it provides the link between the individual who has knowledge that the organization needs, to the organization that makes the knowledge valuable (Hendriks, 1999:94). Social media becomes the link between one individual and various other individuals where knowledge is obtained from. Individuals share or transmit knowledge amongst them, understand and retain the knowledge and then implement or share the new knowledge in their organizations.

2.6 Knowledge sharing challenges

There are various factors that impact on knowledge sharing. Hendriks (1999) identifies organizational structure, organizational culture, and motivation as some factors that affect knowledge sharing. Generally, vertical organizational structures impede the flow of knowledge. Organizations that implement a hierarchical structure for command and control have limited knowledge distribution. People within these organizations believe knowledge is power and therefore hoard knowledge to empower themselves “the more you know, the more indispensable you are” (Yaacob et al., 2011:44).

An organizational culture where individuals do not have shared visions, shared goals and mutual trust may hinder the flow of knowledge. The presence of shared goals and visions amongst employees encourages them to understand their mutual purpose and hence cooperate to achieve it. Some organizational cultures promote knowledge sharing by offering incentives and rewards to the employees (Chow and Chan, 2008).

2.7 Conclusion

The discussion above shows how PKM is a crucial element of organizational knowledge

management. The knowledge worker is at the centre of the knowledge management endeavours in an organization. The organization learns as a result of the sharing of knowledge amongst the individuals within the organisation. Social media provides a platform where individuals can be involved in the PKM process. Social media can be considered as a knowledge market where buyers and sellers of knowledge meet to perform knowledge transactions. Social network group owners and moderators can be viewed as a knowledge brokers. Through the interactions on the group feature, individuals are able to collect, organize and coalesce the knowledge that they have with that which they obtain from their social network. As knowledge workers, they potentially bring that knowledge to the organization and this improves the performance of the organization.

The communication structure of social network groups is horizontal which implies that individuals can share their knowledge freely without fear or boundaries. In a social network group, the group managers and other members of the group communicate on the same level. When a new member joins a social network group, they have the same goals and visions as that of the existing members. The main goal is to share their own knowledge and experiences, as well as to learn from other members' knowledge and experiences. The common vision of members is that they want to become experts in their fields of practice.

This chapter comes to a conclusion that social media are PKM tools while PKM is the basis for organizational knowledge management. It reviews the concepts of PKM and organizational knowledge management. It also identifies knowledge sharing as one of the core processes of organizational knowledge management. Some of the challenges that exist in organizational knowledge management can be addressed through the use of social network groups as knowledge sharing tools. Social networks are therefore important in the knowledge management process because they provide a platform for PKM and a framework for the individual knowledge worker to enrich themselves and others within their database.

CHAPTER 3

3. WEB 2.0 and SOCIAL NETWORKS

In this chapter, Web 2.0 tools are examined by defining Web 2.0 technologies and identifying the tools. I then examine other scholarly work on Web 2.0.The discussion then gives a closer look at Social-networks in particular LinkedIn, Facebook and Google+ as these are the cases being studied in this research paper. I will use these social networks to demonstrate how the social network groups are useful PKM tools

Web 2.0 technology has largely replaced and modified the formerly static World Wide Web. The World Wide Web is known for connecting businesses and people despite the space or distance between. However, Web 1.0 as it has been termed is a static space where individuals are recipients of content. The process of adding content to the web was difficult as it required a special coding language and tools to create web pages. In contrast, Web 2.0 is a series of technologies that gives the user the power to easily add their own content and be part of the global network. The online world or the web has suddenly become a platform where people can also participate. Tim O'Reilly (2004), who coined the term Web 2.0 and advocated it as the new platform for businesses in his Web 2.0 conference in San Francisco, Tim O'Reilly and John Batelle are regarded as the people who popularized the term Web 2.0 (Funk, 2008:5; Gilchrist, 2007:124).

Web 2.0 tools range from blogs, wikis, folksonomies and social networks. Social media has become a common means of interaction. Majority of social media users belong to at least one social network. The Social-network tools include platforms such as Facebook, Twitter, MySpace and LinkedIn. In addition to social interaction these tools are now being widely adopted for collaboration and sharing of ideas (Reynolds, 2007: 40-50).The growth in the popularity of these technologies may also be attested to the existence of the technical savvy generations – Generation Y and Generation Z in the 21st century. This group of technocrats grew up with technology around them and are accustomed to their way of doing things. They find it easier to create a blog than to write an article for publication. The technocrats believe that the blog will reach a much larger audience than

the audience that can be reached through an article that is not web-based (Wodzicki, Schwammlein and Moskaliuk, 2012:9).

3.1 Social media definition

Various definitions have been given for the term social media. The term is also used in relation to or synonymously with terms such as Web 2.0, Social Networking Services (SNS) and Enterprise 2.0. Safko and Brake (2009:6) have defined social media as "activities, practices, and behaviours among communities of people who gather online to share information, knowledge, and opinion using conversational media". These communities are created from networks of friendship or acquaintances and individuals with similar professions. Kaplan and Haenlein (2010:59) defined social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchanges of user-generated content." The common aspects of these definitions are users interacting, sharing and creating useful information. In the preceding chapter, creating and sharing knowledge were identified as the cornerstones of knowledge management.

Web 2.0 was coined by Tim O'Reilly. He made a statement about Web 2.0 that it as "the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform." (O'Reilly, 2005). He differentiated Web 2.0 from Web 1.0 based on the applications supported by each. The differentiation shows that the modern applications allows for interactivity, creation and distribution. One unique feature of Web 2.0 is that it collects the intelligence of large numbers of people because of the networked setting (O'Reilly, 2005:17).

Enterprise 2.0 was coined by McAfee (2006) and has been described by Levy (2007) as integrating Web 2.0 tools and infrastructure into the organization or enterprise. McAfee believe that these technologies may be used for effective knowledge management in organizations.

3.2 Features of Web 2.0

Web 2.0 is aimed to develop creativity, collaboration, functionality and information

sharing. The most apparent and common feature amongst Web 2.0 technologies is the aspect of open sharing. There is a high degree of open exchange of data amongst participants. The openness of the participation adds value to the information shared. Sharing is an important aspect of learning and the end result of active sharing of information is beneficial content. Cheuk and Dervin (2011:120) have described Web 2.0 by an acronym called LANES;

1. Lateral communication- which means that the traditional top down communication is done away with and in come Leadership 2.0. In relation to the group feature, there is no communication hierarchies on the platform
2. All staff can participate- in the groups any member of the group can post, comment or like a post.
3. Networking-that is building networks across the originally set boundaries. The social media groups have such diversity that it allows people from different parts of the world to connect.
4. Expertise visualization- that is realizing expertise that was hidden. Individuals are able to identify experts within the group by looking at the user profile of other group members.
5. Selfishness yet helping others- the point is in helping others you are also learning and empowering yourself. Participants on the group share and also benefit from others.

Social networks allow people to learn on a need basis and give people time to absorb and reflect on the content that they receive or review. Its flexibility allows individuals to choose topics and discussion that they are interested in and to contribute on areas that they are well familiar with thus making the learning process interesting too. This is where individuals are involved in a process of personal knowledge management.

3.3 Principles of social media

The emerging use of social media changes our lives and influences our handling of knowledge and information (Kolbitsch and Maurer, 2006). Tim O'Reilly (2005) identified features of Web 2.0 and among these are:

- *The web as a platform*- which allows you to organize daily tasks and to search through content.

- *Harnessing collective intelligence* – the collective activity of user results in good content amongst other uses
- *Data is the next Intel inside* – is the sole source component in systems whose software infrastructure is largely open source or otherwise commoditized.

Researchers of Enterprise 2.0 identify somewhat similar principles. Lykourentzou, Vergados, Kapetanois and Loumos, (2011:217) state that harnessing collective intelligence means that individuals can benefit from the cumulative expertise of groups. An important principle as pointed out by McAfee (2006) is that of authoring. He describes authoring as important to get all kinds of contributions from knowledge to insights, comments or just facts. Another principle of Enterprise 2.0 according to Kittur and Kraut (2008) is the wisdom of crowds which implies that a large number of people making contributions will result in a high quality product of information. The term "wisdom of crowds" was coined by Suroweicki (2005). Doering, Beach and O'Brien, (2007) identify the same concept as "collective intelligence"

Characteristics of social media have been categorized by Panahi *et al*., (2012:1096) into five features:

- User-generated content- users are not simply readers but are also editors who can contribute by commenting and evaluating.
- Peer to peer communication- social media connects users to other users and allows real time connection globally
- Networking-building a community of individuals with similar interests who develop relationships and discuss freely and also transfer knowledge and their experiences. Audiences have the power in their own hands to transform their personal social networks by connecting and developing intimate bonds with unfamiliar people. (Kaplan and Blakley, 2009)
- Multimedia oriented- social media enables users to share and store different types of media for example videos, photos.
- User friendly- the technology does not require high technical proficiency and also they are easily accessible.

Lietsala and Sirkkunen (2008:24) identify five components of social media sites which are; space for content sharing- users have the ability to start their own posts; creation,

sharing and evaluation of the content by the participants themselves- users can comment on posts giving their own opinions; social interaction- users create relationships that enable them to share freely; all content has an URL to link it to external networks – these links can be used to share on other networks too and thus reaching a bigger audience and profile pages for participants. User's online behaviour range from uploading and viewing content; choosing friends or contacts; ranking favourite content and subscribing to users (Maia *et al*.,2008: 5).

Mayfield (2008:5) regards the following as the main characteristics of social media, participation, openness, conversation, community and connectedness. Basically, social network services provide a space for individuals and tools to interact, find people especially those with similar interests and establish a forum where you can exchange news, information, pictures and so forth.

3.4 Categories of social media / social media tools

All web 2.0 tools enable active collaborations in different ways (Driscoll, 2007: 10).*Blogs*- is short for weblog and the term stemmed from web and logbook, a diary of entries. Therefore a weblog are online diaries or user pages that are written in order from the recent entry to the oldest. Levy (2009) explains that blogs can be commented by other authors and readers. Also reader can follow the post by activating alerts or notifications. Microblogs are a variation of blogs which have limited volume for each entry. Anklam (2009:420) defined a microblog as "a short activity status available to users for social networking". According to Bohringer and Richter (2009), microblogs focus on mobility. Nardi, Schiano and Gumbrecht ,(2004:225) identified five reasons why users may blog which are to update others on activities and whereabouts; to express opinions to influence others; seek other's opinions and feedback; to think by writing and to release emotional tension. Avery *et al*., (2001:31) state that knowledge workers can use blogs for retrieving, organizing and evaluating information.

Wikis- are web pages that can be edited by the user. They allow anyone to create and edit collaborative content. Ward Cunningham was the first American programmer to develop a wiki for the purpose of editing his own website (Barton, 2005:183). Wikis have become very popular and can be seen as a new way to manage and publish content. The term wiki is used to refer the content published using wiki software, and they are based on a concept

of hypertext which can be read and edited by users. The most famous wiki is the Wikipedia, which is a form of an online encyclopaedia. Paroutis and Saleh (2009:53) wrote this about the Wikipedia: "authors work collaboratively to input, produce and update knowledge as opposed to the traditional encyclopaedias where the information is static and predetermined." Qualman (2010:27) reviewed the study by *Nature,* comparing the *Encyclopaedia Britannica* and *Wikipedia* and states that Wikipedia may be more accurate because there are numerous experts contributing to it. But also on the other hand in niche fields few experts are more reliable as opposed to few contributors.

Folksonomy- this is also known as social bookmarking or tagging. Social bookmarking allows user to store, tag, share and evaluate their bookmarks (Razmerita *et al*., 2009:1029). Tagging is attaching keywords to content to let users mark and quickly find the items. The main feature of social bookmarks is sharing and communication. Scholars like Razmerita *et al*., (2009: 1033) have classified social bookmarking as personal knowledge management tool.

Social Networks- Barnes (1954: 40) has defined a social network as "a social structure comprised of nodes (individuals or organizations) that are connected by one or more specific types of relations". Social networks are used for building and maintaining contacts. Different relationships are formed on the social networks as a result of commenting to posts or tagging (Tapiador, Fumero, Salvachua and Aguirre, 2006: 12). The goals of social networks include socializing, networking and finding people with similar interests, finding knowledge and finding a solution to a problem (Back *et al*., 2009:70). These are the main activities that are evident on the social networks. Avery *et al*., (2001:31) notes the possibility of sharing information and collaboration through social networks.

3.5 Social Media/ Social Network Platforms Literature Review

Social media has received a lot of attention in research recently. This is because social media have introduced communication patterns that allow content creation; that can create new forms of expression; and stimulates participation which has a wider variety and wider scope. Friedman (2005: 112-116) classified the three phases of globalization identifying that the world has become flatter because of phase 3 of globalization, which has changed how people communicate and collaborate more rapidly than ever. Social media is one of

these tools for communication and collaboration. The terms social media and social network platforms are used interchangeably in this paper.

Various studies have been conducted in the area of social media. Studies have been conducted in fields such as the higher education environment, the business environment especially in marketing, also in the field of journalism and human resources. There are different perspectives presented which include that higher education should capitalize on social media technologies as blended learning tools; that social networks should be used as HR tools; that social networks may be used as marketing tools. However, not much research has been done on social media as a PKM tool and to my knowledge there has not been any study that concentrated on the group feature of social network platforms. The following section will look at some of these studies. Wolfe (2003) recognizes that the participatory nature of Web 2.0 put the individual at the centre knowledge creation. The Web 2.0 platforms all require individual user input. The interaction and collaboration amongst the users results in the individuals creating new knowledge.

Razmerita *et al*., (2009) conducted a theoretical study on new approaches for managing personal knowledge in the Web 2.0 era. They investigated whether social software is a solution for challenges associated with the management of knowledge and also whether personal objectives can be reconciled and managing knowledge management can be reconciled. Their findings include that Web 2.0 plays a multifaceted role for communicating, collaborating, sharing and managing knowledge. Users exchange information and have a common goal of learning and creating knowledge as well as categorizing the knowledge. As such, Web 2.0 enables a new model of personal knowledge management.

Razmerita *et al*., (2009), also reiterated O'Reilly (2005) that online social networking systems allow people to interact on a global level and thus interact more effectively. The global platform facilitates a process of combining insights and experiences from around the world with an individual's existing knowledge. They also argue that Web 2.0 cultivates personal knowledge processes within individuals. As a result of the interactions that individuals are involved in on the social network platform, individuals obtain PKM skills that enable them to become more effective individuals.

Other studies have concentrated on the existence and development of trust relationships on social networks. O'Doherty, Jouili and Van Roy, (2012) investigated into the inference of

trust relations between actor pairs of a social network. They state that trust amongst users improves and enhances the communication habits on social networks (O'Doherty *et al*., 2012:13). In their findings, they provide a metric measure that can compute trust between pairs of actors based on their shared items and two-hop neighbourhood. In the previous chapter, trust was identified as one of the factors influencing knowledge sharing. Users are more inclined to share and to interact with other users because of the trust relationship created among them. This trust is also extended to connections of their connections.

The contribution patterns of individuals on social media have also been studied. Singh *et al*., (2009:11) observed the nature of user contributions and found that it was largely voluntary and that users had a choice of contributing or not. Contribution patterns can be influenced by providing users with contribution incentives. Motivational incentives range from virtual currency, extra bandwidth to mention a few. Another motivation factor could be recognition which can in turn generate some career benefits, for example, weekly top contributors on LinkedIn may be considered by recruiters. De Choudhury and Sundaram (2011:53) identified the factors that influence individual participation as intrinsic and extrinsic factors, where intrinsic factors are: social awareness, community characteristics and creator reputation. Individuals participate as a way of expressing their interests, ideas and opinions, and also to be recognised within the society. The extrinsic factors that they identified are media context and conversational interestingness. Different media types attract different crowds and different kinds of conversations.

3.5.1 Social media in Business

Some organizations have adopted the social technologies as new ways of communication and also collaboration. With the existence of Really Simple Syndication (RSS) users can customize the content that they can receive from others. RSS allows convenience and rapidity of information sharing and distribution (Zhang, Liu and Xiao, 2008:240).This results in efficiency within the organization. The importance of RSS is that it allows users to organize and manage the information that they are exposed to on the social network to avoid the galling issue of dealing with big data. Individuals can get notifications about the topics that they find important to their purposes.

Organizations traditionally implement static data repositories such as data warehouses to organize their data and to allow for future use. Data warehousing requires more time and money for maintenance than social media networks (Greaves, 2007). Social networks are

not expensive to implement. The data found on social media usually has some reasoning and explanations accompanying it. The information is current and up to date and also clarification can be given on unclear issues by the contributors. The shared posts and discussions on social network groups are stored in the archive of the group such that if other users require that information they are able to simply search from the archives using keywords.

Some organizational case studies have been conducted on the economic impact of social technologies by the McKinsey Global Institute (Chui *et al.*, 2012). Their findings showed that a lot of money can be made from the collaboration and communication across enterprises across the following business sectors; consumer packaged goods, consumer financial services, professional services and advanced manufacturing and the social sector. From such a study it may be realized that there is a lot of untapped potential in social technology that is yet to be explored. A paper by Karkkainen, Jussila and Vaisanen, (2010) identifies potentially effective ways to reduce the gap between social media and its use in innovation activities in the business. Findings showed that B2B sector recognize the social media potential in innovation and clarifying customer needs.

In his book, Qualman (2010: xxiii) notes that social media eliminates redundancy in tasks that is people performing the same tasks over and over again. When one person has experience in a particular field, they are able to share their experiences with others. Specifically, if one individual manages to solve a problem, they can share the solution with others thereby saving time on figuring out how to solve the problem. This is also supported by Singh, Jain and Kankanhalli, (2009:11) in their paper, "while the task completion costs are incurred by the individual, the benefits are common". Furthermore, individuals can come together and discuss an issue to come up with a solution in a shorter turnaround time than when individuals try to solve a problem alone.

3.5.2 Social Media in Education

The education field has conducted various studies on social media about how to incorporate social media in the learning curriculum especially for higher education. Ullrich, Borau, Luo, Tan, Shen and Shen, (2008) analysed the technological principles of Web 2.0 and further described their pedagogical implications on learning. They state that the technological principles of Web 2.0 are in line with modern educational theories like

constructivism and connectionism (Ullrich *et al*., 2008:709). Socially oriented constructivist theories stress the collaborative efforts of groups of learner as a source of learning, they map harnessing the power of crowds to these theories (Ullrich *et al*., 2008:707). Learners are more engaged in the learning process if they work with others in a group. Through sharing of different good and bad ideas, learners are able to extract crucial lessons from the collaboration. Alexander (2006) also speaks of the use of wikis, blogs and social bookmarking in learning. The quality of information shared by learners is relatively rich. One of the motivating factors is the global audience, authentic audience that they are writing to and fro, which drives the students to construct better quality knowledge.

In the education field, Dabbagh and Kitsantas (2012) in their paper, present personal learning environments as pedagogical ways of connecting formal and informal learning using social media as a tool. They propose a three level pedagogical framework for integrating social media to facilitate self-regulated learning. These three levels result in the acquiring of knowledge which they refer to as learning. The levels are:

- Personal information management.
- Social interaction and collaboration.
- Information aggregation and management.

These three levels ensure that learning actually takes place with the support of social media systems. In the first level students use the information they get on social media to and go through a process of personal reflection on their tacit knowledge. They can then increase their tacit knowledge by socializing with others on the social network. Level three can then be aligned to the stage of combination in Nonaka's SECI model.

Wodzicki *et al*., (2011) examined how students used a social network site called StudiVZ for knowledge exchange. StudiVZ is a German equivalent of Facebook social network. StudiVZ stands for "Studierendenverzeichnis" which means ("student directory") and this site is one of the most popular sites in German. The results of their study shows that one fifth of the participants exchanged study related knowledge through StudiVZ. The group feature on StudiVZ enables study-related exchange with specific members (Wodzicki *et al.*, 2012:11). Because some students exchange this type of information on the social network, it can be concluded that they can learn from this study related information.

A Bayesian analysis in the study of Laru, Naykki, and Jarvela (2012) showed that knowledge acquisition can be increased by using social media tools together to perform multiple tasks. Through social interactions in small groups where each contributes towards achievement of the learning outcomes, students can increase their knowledge base.

Case studies in the field of higher education have shown that the "digital natives" are more attuned to technology (Technology Quarterly, *The Net Generation unplugged*, 2010). Therefore, they can easily use this technology to enhance their learning experiences. Technological adoption has been identified as another factor that influences knowledge sharing. Today's young people grew up in environments that were immersed with computers and technology. They are also impressed with social media such as Facebook, twitter among others. Social media is regarded as a natural learning environment as they feel comfortable and familiar with the technology (Blankenship, 2011:40). The social networks are an extension of their real life whereas educators are reaching out to their students through social media and drawing on the ability of social media to create content and collaborate .Some case study shows that teachers are also embracing the use of social media at an academic level (Grosseck, Bran and Tiru, 2011). In this study, various literatures were examined and have recommended Facebook as an educational tool that can assist in the learning process of the students. This shows that even Generation Y and before are also realizing the benefits of social media as a knowledge sharing platform. Students are largely involved in social media tasks that foster knowledge transfer (Madge, Meek, Wellens and Hooley, 2009:142). Such activities help them to develop critical thought and interpersonal intelligence (Lampe, Ellinson and Steinfeld, 2008:728).

3.5.3 Social Media in Health Industry

Steininger *et al*., (2010) have also identified social web technologies as effective tools to transfer tacit knowledge in the healthcare industry. The health sectors also find social media crucial in their practise for communication with patients. Colleagues in the practise also have a platform for sharing information and their experiences. Specific to the field, Newbold and Campos (2011) suggests that where individuals used to discuss with their family about their illness and consult with friends and colleagues who have had similar experiences, patients are now relying on social media of this kind of support. A valid

example would be pregnancy interest page where pregnant women support each other by sharing personal information. This is more private but at the same time diverse ideas and

3.5.4 Social Media for Marketing and Sales

In the marketing and sales industry surveys show that most consumers are relying on social media to get information about new brands (Rapp, Panagopoulos and Andzulis, 2012:309). Folksonomy is the social media tool that is mainly used in creating brand awareness. The number of likes and tags that a product, service or an organization gets shows the popularity of the product and hence increases the sales. Similarly, posts and comments that are popular receive a lot of likes. This shows general agreement and acceptance of the idea. Such comments and posts are potentially meaningful and useful.

information is shared. Health marketers and practitioners can use this context to understand the behaviour of the patients and their needs.

3.5.5 Social Media for Recruitment

A study by Birkman International (2010) found that;

> "*HR professionals understand the potential of social media and overwhelmingly agree (83 percent) that these technologies can improve communication bring greater efficiency to the workplace and provide great insight about people's interests and motivations. They also understand it offers immense opportunities for learning and knowledge sharing*."

A great deal of the recruitment process is now done or aided by social media. This ranges from advertising the job positions to screening individuals based on their social media activities and profiles. The social network platform LinkedIn was founded for the purpose of job marketing and search (Qualman, 2010: 177).

Social Media for Social Relations

Social networking provides a means of immediate interactive communication with family and friends at the same time it enables individuals to meet other people and enlarge social circles (Izquierdo, 2011). Through interaction and collaborating with a larger society, new mental models are constructed. Individual knowledge can be used to benefit a larger

number of people. The architecture of Web 2.0 makes this easier because they are readily accessible. Content is disseminated in various ways and on various devices. RSS feeds allow users to pull data and provide push notifications of new data (Ullrich *et al*., 2008). These can be on portable PCs and smart phones. However, other scholars argue on accessibility in terms of inclusivity. Zajicek (2007) in her paper states that Web 2.0 are built young socially integrated people and cannot be readily used by older people, socially disadvantaged people or disabled people.

All of these studies discussed in this section clearly show how social media has been identified as a valuable tool in the business world. As a result various industries and organizations are looking for ways to incorporate social media in order to also take advantage of its value. One such way is using it as a knowledge management tool for creating and sharing knowledge.

3.6 Social Media Critique

Others have argued that the communication of social networks is a poor substitute for real human interaction (Izquierdo, 2011). This is because the current social networks are limited in the types of interaction that they can support. For instance, some platforms cannot support body language. As a result some of the messages that are shared on the social networks have a chance of being misinterpreted. However, the on-going conversations on the social networks allow individuals the opportunity to clarify unclear statements so that they are understandable.

Gundecha and Liu (2012) observed that social media data are vast, noisy, distributed, unstructured and dynamic. They argue that some of the information shared is highly irrelevant, not useful in the organization or difficult to locate on the social media platforms that exist. They conducted a study on mining social media and suggested employing social media mining tools such as TweetTracker to discover actionable knowledge from the social networks.

Other scholars in education believe that the disorientation and cognitive overload can become obstacles of the learning process in individuals (Ullrich *et al*., 2008). Also, individuals may become distracted because of communicating with a large community. Moreover, if the content is not moderated individuals could have a difficult time sifting through the noise and thus slowing down the learning process. The quality of material on

the web is poor, yet some is very respectable academic research. One has to pay attention to credibility and authenticity of the authors of the article.

Studies have therefore been conducted on the quality of social media content. One such study was conducted by Agichtein and Liu (2008) on the social platform Yahoo! Answers. In their study they identified the various information sources of social media from the content contributed to non- content information such a useful links and the comments and feedback. They observe that there is high quality content as well as low quality in some instances abusive content.

Another issue is that a community of practice may result in the reinforcement of silos that resemble current organizational structures and hierarchies that inhibit learning and knowledge creation rather than promoting cross-silo conversation. The administrators of the group may want to exercise power because of the group ownership. Other non-expert users may also feel intimidated to post an issue because of the fear that others may consider it unintelligent. It becomes very easy for a sub-group of like-minded colleagues or a group of people who know each other to dominate the communicating space in online discussions (Mislove, Marcon, Gummadi, Druschel and Bhattacharjee, 2007:31). This sub group may be in the habit of commenting only on each other's posts and supporting each other's ideas. This may result in insecurities amongst other members.

Although there is a large amount of content and information shared, this does not mean that the knowledge will necessarily be attended to or utilized to inform decision making. This is evident if the members of the group are not part of the decision making team in their organization. The individuals gain new knowledge for themselves but they cannot apply this knowledge. If there is no acknowledgement or action on the new knowledge this may disappoint employees and discourage them from participating. Power differentials of the same sort as any meeting do exist in online environments. An anonymous space would be more constructive to exchange ideas to avoid intimidation.

Rheingold (2010) suggests that critical consumers of social media should be mindful when deploying their attention and identified the “Literacies of social media” as follows;

Attention- the ability to know where and when to place one’s attention when navigating various types of social media and when navigating between social media and real world moments

Participation-This is a question of being a "good participant" of knowing how and when to post a comment or a blog that is helpful or appropriate.

Collaboration- Rheingold (2010) argues that online communities are designed to thrive via collaboration, that lone wolves refusing to listen to other people slow down or derail progress.

Network awareness- This refers to being literate in how a social media network operates and about where you can find certain information.

Critical consumption- referred to as "crap detection", deciding which nuggets are reliable and which are disposable.

These elements help to train the users of to become literate in social media. He suggests that if users are trained in this way, the quality of information on the social media can become better. This can be viewed as effective PKM of the users. Most users on the groups on social media possess these literacies.

3.7 Social Media Groups

The communities that develop online take different forms. One of the forms is the groups feature. Backstrom, Kumar, Marlow, Novak and Tomkins (2008:117-118) suggests that:

> *A group is simply a collection of people that can be divided into two high-level categories: first, some are an extension of social identification, whereby individuals affiliate with organizational memberships, religious beliefs, gender, age or other cohorts… The second class of online groups is more about structured communication. These groups are built around communication, i.e. social support, political debate, civic engagement or the discussion of specific interests.*

Like any other social group, online groups are formed for a purpose and go through the growth and development to decline process as well. Groups can be developed as common interest groups or subject matter groups. Online groups vary in size, moderation and privacy. The groups are centred on communication and or the discussion of common interests.

With time relationships develop and improve amongst members of the group. Also, personal relationships between members evolve with varying strength based on the atomic interactions. The relationships produced range from strong ties to weak ties. Social ties are usually in the form of social support groups where members can assist each other all the time. Weak ties are maybe in the form of fan groups. According to Granovetter (1973), weak ties are connections with acquaintances that are not within an individual's social circle and strong ties are the relationships within an individual's immediate circle. The existence of weak ties offers a bridge to other communities and thus individuals can be exposed to communities that they do not belong to and therefore increase the knowledge base.

In their article, Maia *et al.,* (2008) identify five types of groups. Their classification is based on user interaction behaviour on social-networks. Their case study was based on YouTube but I have interpreted the results to generic social networks. These groups that they identified are groups that are apparent on social networks in general. But this classification can also be used within the interest groups that are being studied in this paper.

The first group is the *small community member*, which is a group of close people- family, colleagues. In this type of group users are not very much inclined to interact. This is because there is do not find the need to keep in touch as they have created and established relationships already. Most users are not active on the group (Maia *et al.,* 2008:4).

The second group type is the *content producer*. This comprises of the type of user who makes content available to others. This type of user is very active and their primary goal is to others benefit from. They also participate in other producers' feed (Maia *et al.,* 2008:5). Content producing is posting new posts and commenting on other posts to bring new insights to the discussion.

In contrast to the content producer another group identified as *content consumers*, are users who browse the social networks for available feeds or posts from others (Maia *et al.,*, 2008:5). Some active consumers use the like option to show that they have read the post and probably understood or agree with it.

Producer and consumer is the group of members that are involved in activities of posting and reading other people's posts. According to Maia *et al.,* (2008), this is the largest group on social networks. These can be considered very active members (Maia *et al.,* 2008:5).

The last group which they classified as *other* are for very passive users that rarely access their accounts. Non-participants or observers or lurkers belong to this category (Maia *et al.,* 2008:5; Nonnecke and Preece, 2000:74).

3.8 Social networks as a knowledge creation and sharing tool

The key component of learning organization is communication, interaction and collaboration. Lave and Wenger (1991) have placed emphasis on learning in social relationships. They believe that individuals communicate and learn better in communities of practise (Lave, 1991:64). Communities of Practice (CoP) are groups of individuals with the same areas of interest that organize themselves and are able to informally exchange thoughts and ideas because of the trust relationships formed. The engagement involved and the participation of members give an appropriate environment for learning to take place. This interaction between colleagues joins their knowledge together and builds more knowledge than that existed before. The individuals gain new perspectives and ways of responding to problems that may arise.

3.9 LinkedIn

LinkedIn is one of the social networking platforms that this research focuses upon. LinkedIn is one of the world's largest professional social networking sites. It was founded in 2002 but was officially launched to the public in 2003 (Heights Library, 2012). This platform is used by individuals to connect with friends and other people who are in the same field or areas of expertise. LinkedIn is a social network whose main focus is to harness the power of social technology to improve professional business networking allowing decision makers to make informed strategic decisions that will leverage their business. Its uniqueness, from other social networks is that it allows industry professionals across the globe to interact and therefore gives access to current industry trends and the sharing of useful insights. According to statistics, LinkedIn usage has grown significantly in South Africa.In 2011 there was an 83% growth (600 000 professionals) from this year and in 2012 a 45% increase (500 000 professionals) with a total of 1,6 million people. In February 2012, LinkedIn hit 150million members (Scheink, 2013). It is currently ranked 8th most visited website by South Africans.

LinkedIn has a number of interesting features. To be able to access these features one has to become a member. Membership on LinkedIn is simply creating your user profile. After you become a user, you have the ability to "connect" with people or invite people to your network. This process reinforces existing relationships and also builds new relationships. The connections that one chooses can exist from individuals and extends to your connections' connections and also exists in the subject matter or organizations that interest them. LinkedIn also displays updates from connections and gives users the chance to choose the content you want to read. Users also have a choice on whether they want to be observers or participants. In most cases user contribute on matters that they have previous experience in and they comment to add to the information from other users or to seek clarification on areas that they are not clear on or do not understand.

Another feature of LinkedIn is the LinkedIn groups. The groups consist of individuals with similar expertise and interests. They support discussions on the subject matter and are moderated by the group owners and managers. Users can search for groups that interest them on LinkedIn and join these. Groups may be private, for security reasons and accessible to members. In this case, a user needs to send a request to join the group. The private groups normally go through the request and the profile of the user requesting access to the group and if the profile fits with the group the request will be approved. Other groups may be open to Internet users if they want to read the posts to however they must join in order to post messages. Groups also keep their members informed through emails with updates to the group, including most talked about discussions within your professional circles (Skeels and Grudin, 2009:4).

LinkedIn also has a feature which is similar to Yahoo! Answers, called LinkedIn Answers. This feature allows users to ask questions that will be posted to the LinkedIn community to answer. The main difference from Yahoo! Answers is that questions are potentially more business-oriented. To ensure credibility the identity of the individuals involved in asking and answering questions is known, that is, their profiles and in some cases their credentials.

The main feature of LinkedIn is the LinkedIn Recruiter, which are its most popular feature and also its money-maker. It focuses on the abilities of an individual and their employability. Many people use LinkedIn as an online tool to market themselves professionally. These people believe that LinkedIn is to create connections for the purpose of job searching. LinkedIn currently has more value for its shares than Facebook, because

of the Job Listing. It has 3 job search categories and charges a premium for a user's profile to be noticeable on the job market. LinkedIn users may opt in or out to receive alerts and notifications of the most recent or popular discussions. It also has a mobile application that allows users to access data easily from anywhere as long as they have an active internet connection (Skeels and Grudin, 2009:3).

3.10 Facebook

Facebook was founded in 2004 by Mark Zuckerberg and his friends at the Harvard University. It was developed as a project and was then extended to various academic institutions in the United States for students to get to know each other (Carlson, 2010). Today, Facebook membership is open to anyone who is over the age of 13.The main features of Facebook are discussed below:

News feed

This is the home page for Facebook users. On the Newsfeed the user sees a list of their friend's most recent activities. This includes any changes that have been made by any of the user's friends, birthday reminders and upcoming event alerts.

Wall

This is the personal profile for the user. All the user's posts are loaded onto their wall, and friends can send a message directly to another user's wall. User's information for example their biography, friends and photos can be found on the user's wall

Friends

This is a list and link to all the users that have been connected with. The connection is established by sending a "friend request" which can be accepted or ignored by the other user. If the request is accepted, one can now view and receive alerts about the other's activities. The term friend on Facebook refers to anyone that you have a connection with on Facebook that is an acquaintance can become a friend on Facebook. This does not necessarily mean that you have a close relationship (Carlson, 2010).

Groups and Pages

This feature is used to enable a number of people to share information on a common platform and not on individual wall. An individual can create a group and allow other users to join by using particular criteria of selection.

Pages are created to allow fans to subscribe to receive the posts and updates from that

page. The subscription is done by another Facebook function known as “like-ing”. In addition to “like-ing”, users can also comment and give their own opinion on the page (Gerolimos, 2011).

3.11 Google+

Google+ is a subdomain of Google.inc. It has recently been rated the second largest social network by Forbes (Kosner, 2013). Its membership is also open to everyone over the age of 13. Google+ deliberately avoided the use of the term “friend” and rather uses circles to show the links among individuals that have connected with each other. Some features of Google+ are discussed below:

Stream

The "Stream" occupies the middle of the page and it is where users see updates from those in their Circles. Users are also able to enter a post on the stream. Other possible uploads include hyperlinks, photos and videos. The Stream can be filtered to show only posts from specific Circles.

Google+ pages and Google+ communities are equivalents of Facebook pages and groups respectively. Google+ Communities can also be viewed as CoPs as they are formed for particular interest groups. They also allow users to create ongoing conversations about particular topics in their field or industry.

3.12 Mapping Social network groups to Knowledge Sharing

In the process of knowledge acquisition individuals go through complex cognitive processes: perception, communication, association and reasoning. These processes take place during the interactions on LinkedIn groups. Knowledge creation can be defined as the formation of new ideas through the interactions between explicit and tacit knowledge in individual minds (Nonaka and Takeuchi, 1995). And this kind of interaction is fostered by hermeneutic interpretation. This involves both expressing oneself and listening to lend richness to understanding. This platform is offered by social networks groups.

Social Network groups are created by an individual or a group of individuals who realize the need to exchange information with their industry counterparts. These are known as the group administrators. A group may be an open group or a closed group. An open group allows any user who wants to join to click the join group button and become a member. A

closed group requires that the user sends a request to join the group and this request is processed and approved or disapproved by the administrators of that group. Once a user has become a member of the group, he or she may post, contribute or comment on a topic or post. Users are free to express their opinion and others to also comment on these opinions.

As mentioned before, the groups are made of industry relations which can be viewed as Communities of Practice, among these individuals are experts and non-experts in the industry; and also experienced and inexperienced individuals. These people are able to share their tacit knowledge with others. Also non-industry experts are able to share their ideas and their thoughts which can further be discussed in the group. It is clear that information is moving freely in the group. Posts that are not accurate are moderated by the administrators or other experts on the group therefore producing only high quality of information. The availability of profiling systems and the principle of authorship facilitate identification of expertise communities, credible sources of information and connection to experts (Marfleet, 2008; John and Seligmann, 2006).

Kikoski and Kikoski (2004: 8) describe tacit knowledge as knowledge that is fragile and personal therefore conversations are important to discovering and creating knowledge among groups. Trust and relationships have to be built for there to exist any form of socialization that is from tacit to tacit knowledge (Nonaka and Konno, 1998:46). Individuals should be able to build relationships based on mutual respect and trust. The environment should be free of intimidation, suspicion and competition. This type of environment enables new understandings to be developed. According to Kikoski and Kikoski (2004:13) one of the activities of which learning organizations are skilled is learning from experience and best practices of others. These experiences have to be shared by the individuals. This is the kind of knowledge that Nonaka and Konno (1998: 42) described as tacit knowledge. Tacit knowledge is knowledge that is not easy to articulate. He describes the conversion of knowledge from tacit knowledge to tacit knowledge that is from one individual to another, as socialization. This is achieved through interactions, participation and observations within networks. Explicit knowledge is “knowledge that is codified and conveyed to others through dialog, demonstration, or media”, (Nonaka and Konno, 1998:42). The SECI model illustrates how the organization can be viewed as a social learning system.

The characteristics of social network groups that map to Knowledge sharing are:

- Interactions that is, starting discussions, posting, commenting, tagging and uploading useful links and information.
- Experience sharing that is, the knowledge is shared is usually based on the experience of the user
- Observations that is, reading posts, newsfeed and comments,
- Informal relationship/networking that is, users can create collaborative relationships based on meeting through the social network groups.
- Mutual trust that is, users may use the information that they get because they trust the sources of information, and also they can share because they trust that one day they will also benefit from the information shared.

Table 3. Mapping Social networks to the SECI model and PKM 2.0 (Cheong and Tsui, 2010:18).

Activity	Form of knowledge conversion	PKM 2.0 concept	Social network Groups' feature
Socialization	Tacit-to-tacit	Personal wisdom creation	• Creation of connections with similar interests and skills from different organizations and countries • Participation in group discussions • observation by reading through posts and understanding the message in the post and learning from the comments • creative chaos where different comments and opinions and presented
Externalization	Tacit-to-explicit	Inter-personal Knowledge Transferring	• The ability to comment freely • the availability of different perspectives • the availability of experts with experience allows for corrections to be given
Combination	Explicit-to-explicit	Personal Information Management	• Sharing information by starting a post and receiving comments from other member • Obtaining information from others and then using it in your own context
Internalization	Explicit-to-tacit	Personal knowledge internalization	• Reflecting on information received and being able to use it when the need arises

In the 21st century, because of the existence of digital natives and digital immigrants, most information exchange and conversations are taking place via information technologies. In the knowledge economy that we live in, creating conversation is very important (Webber, 1993).Because of the global inter-connectedness and internet-works, more conversation can exist, which is powerful for learning because of the diversity of the individuals involved in the conversation. For organizational learning to take place leaders need to take a step back from traditional methods of managing and to allow information flow from the individuals that possess the knowledge. They need to adopt a type of leadership known as Leadership 2.0. A review of this type of leadership is however beyond the purpose of this research.

Another theory that maps social media to knowledge sharing is the "concept of ba" which was originally proposed by a Japanese philosopher Kitaro Nishida. Nonaka and Konno (1998) describe *Ba* as a place or platform where individuals can advance their knowledge through emerging relationships in this space. In this space the individual gets involved in the environment and expands his/her own boundaries. This is also evident on social network groups were one begins to learn from others and thus mobbing from their own space. The users of social network groups create relationships based on their constant interaction and the trust that is built overtime.

3.13 Conclusion

It is clear that most theories of knowledge sharing map very well with Web 2.0 technology. The most important aspect is socialization that allows creation of tacit knowledge. Socialization is the prominent aspect of social media. In particular, the group feature allows conversations and collaboration that creates knowledge. The aim of this thesis is to show that social media groups are useful tools for PKM. This has been indicated by the literature discussed in this chapter. The literature shows that various industries have adopted social media for collaboration. This means that individuals with various professions can benefit from being part of a group on the social media.

Social media can be used to create and maintain relationships that are beneficial to the individual in terms of knowledge creation because it is a platform to meet people with different knowledge bases and therefore organize your own knowledge. The random pieces of information that are found on the interactions on the social networks can be systematically integrated and applied to expand our personal knowledge.

It can thus be concluded that social media can enable and significantly increase the use of distributed knowledge. Social media provides novel and useful ways of interacting and collaborating towards innovation. Social media attempts to break social and cultural barriers that can prevent knowledge acquisition. Conversations of different individual from different origins can be joined and this can result in multiplying their knowledge. If the conversations are respectful, generative with aspects of enquiry, then the existing knowledge can be improved (Kikoski and Kikoski, 2004:7). Enquiry is especially important as it helps to know one another's thinking and clarify and perhaps rebuild our own mental models. In this light, there is therefore need for more awareness of the full potential of social media.

It can also be concluded that social media attempts to eliminate the stickiness of information. Social network groups bring the problem-solving capabilities together in one place by bringing individuals who are experienced in the field together to share information and assist one another (von Hippel, 1994:435). No individual can know everything, but the combined force of a group will build structures that can reach the stars. The crises crossing of ideas, view and perspectives from various individuals has the ability to recreate the tacit knowledge they possess. Post modernism theory also holds that knowledge is constructed communally. This means that a community is a crucial element for the creation of knowledge through the sharing processes. The groups on the social networks form a community.

CHAPTER 4

4. WEB 2.0 GROUP FEATURES and PKM: EMPIRICAL STUDY

This chapter outlines the empirical study that was undertaken in order to obtain answers for the research questions itemized in Chapter 1, sub-section 1.2 of this thesis. The methodology that was used for the research is described. The questions that were chosen for the survey described as they relate to the aim of the thesis. The findings of the survey are analysed and discussed. Finally, the chapter concludes with a concise summary of the empirical study.

This study is aimed at finding out whether knowledge sharing and creation is evident on the social-networks groups. Generally, people perceive social media as mere platforms for socialization. The groups are a feature on the social network that acts like a community of practise (Lave and Wenger, 1991). Some scholars believe that communities of practice promote knowledge sharing activities that result in a successful knowledge management implementation. The study is validated by gathering facts from the individuals who are actually using the social-networks. It explores whether the user is benefiting from sharing knowledge on social networks and whether the user is also sharing their personal knowledge on the social networks.

The focus on the groups is the unique aspect of this research. The findings of the research may lead to promoting the social network groups as a learning platform rather than how it is presently viewed, as a social platform. It is the general view of people and organizations that social-networks, as the name suggests are exclusively for social interactions. The study will show that unlike the wall, the group gathers individuals with similar interests, experiences and insights which allows for richer content to be created through their constant communal interaction (Berger and Luckmann, 2006:185). Previous studies have highlighted the existence of knowledge management activities on the social network platform as a whole. Therefore, this study seeks to add to the body of knowledge the value that lies within the communities that are formed on social networks and to develop a better understanding of the knowledge sharing value that it presents with the group feature. This will provide an effective and efficient way for organizations and individuals to use the social-networks in the knowledge economy era.

4.1 Methodology

The *Figure 5* depicts the systematic process that I followed in order to find solutions to my research problem:

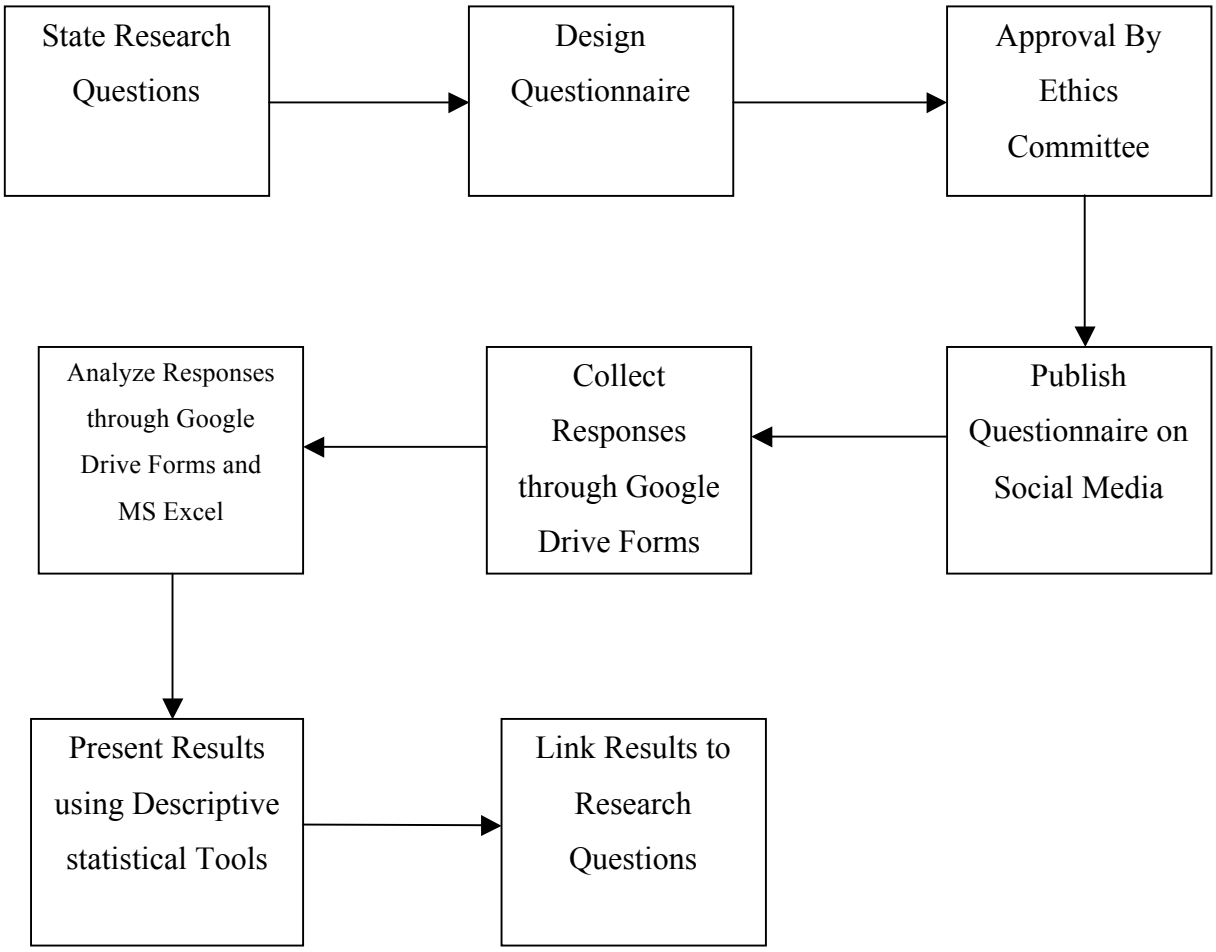

Figure 5. Summary of Research Methodology for Empirical Study

Step 1: Research questions were formulated around existing gaps within specialized literature for Web 2.0 and PKM studies.

Step 2: A questionnaire was designed that will assist in finding answers to the research questions. Thereafter, a pilot survey test run was performed. The questionnaire was emailed to 15 individuals for completion. This was done in order to check the clarity of questions within the designed questionnaire. Feedback obtained from participants of the pilot test run was used to re-construct some of the questions in the questionnaire.

Step 3: After questionnaire design, the questionnaire was sent to my research supervisor to obtain Ethical clearance from the Ethics Committee. In addition to that, ethical clearance and prior approval was given by managers of Facebook, LinkedIn and Google+ social network groups onto which I intended to publish my survey questionnaire.

Step 4: The survey was posted on five LinkedIn groups, three Google+ communities, three Facebook groups and two Facebook pages with a total population of 185 826 users. The link to the survey was also emailed to an additional twenty five acquaintances.

Step 5: The responses were collected through Google Drive Forms which automatically records all the responses.

Step 6 and 7: Google drive forms also generates a summary of results based on the collected responses. This summary was used to analyse the collected data. The results were also exported to Microsoft Excel where they were further analysed. The results were presented using bar graphs, pie charts, frequency distribution tables, histograms and measure of central tendency, which are tools for descriptive statistics.

Step 8: The findings were discussed and related to the research questions. Conclusions were drawn based on this discussion.

4.1.1 Research approach

The study is a quantitative research study that uses a survey questionnaire as a tool. The researcher will explain the phenomenon that social media groups are useful PKM tools by collecting numerical data that are analysed using mathematically based methods. It is well suited because it gives facts and hard evidence about the phenomenon (De Vaus, 2002:5).

4.1.2 Participants

Population

This study uses statistical generalisation using non-probability theory. These techniques can be used since the sample is widely dispersed and it is a cheaper and more feasible option (De Vaus, 2002:90). In non- probability sampling all units of the population do not have an equal chance of being selected because the sampling frame cannot be compiled. This is so for this study because the internet users are vast and it is difficult to reach all of them at the same time. More so, there are a large number of social-networks on the internet and therefore not all of them could be used for this study. The choice of networks that was used as a sampling frame is Facebook, LinkedIn and Google+. These are the networks that I am exposed to and that I have a good understanding of. The main weakness of this study is therefore that it is not representative of the entire population.

The sampling method chosen is convenience sampling where the conveniently available people, who meet the study criteria who are available and willing to help, are used as a

sample. The sampling method used was based on my previous knowledge of the social-networks selected. The reason was because I believed that the communities on these social-networks promoted knowledge sharing. The sample chosen was also convenient and available to me. Participation was voluntary and users could opt in or out. This type of sampling on the internet is called unrestricted self-selected surveys which are open to the public to participate by choice (Oates, 2006:98).

The link to the survey was posted on the walls of the groups. All the members of these groups population could see the link on the wall if they were visited the group wall during that time. Therefore the exposure to the survey was opportunistic had an equal chance of being selected since the link was posted on each of the groups' main pages where all members have access to. The sample size was 85 respondents as this was the number of people who responded to the survey.

The choice of the sampling method was the most suitable method for this study because of the scope that I wanted to cover- people in different parts of the world to show the diversity of the people using social-network groups. It was also the most feasible method as it pertains to cost and time.

Sample group and sampling procedure

The sample group chosen were the users of the social-networks that I belong to. The sample frame used is the users of social network groups. The target population are the people who are already social-network users and belong to a particular group or community. The questionnaire did not accommodate users that did not belong to a group.

The survey was posted on five LinkedIn groups, three Google+ communities, three Facebook groups and two Facebook pages with a total population of 185 826 users. The link to the survey was also emailed to an additional twenty five acquaintances. The limitation of emailing was that it was limited to the mailing list that I had access to. Eighty five responses were received over a period of three weeks. Due to time constraints these were used as the sample.

The sample is limited to the specifications above because these are the groups that I could obtain ethical clearance from in the time that I had. The owners and the managers of the groups are the ones that are responsible for managing the content posted on to the walls. They act as moderators and verifiers of the content.

The respondents are anonymous as there is no personal information given besides the demographics. The responses will be kept confidential and only used for the purpose of this study.

4.1.3 Research design

Survey

The research design used was a non-experimental survey. This strategy is very suitable for explaratory studies (Saunders, Lewis and Thornhill, 1997:138). In this case the survey was used to assess social network groups in a new light, as personal knowledge management tools. The survey takes the form of a questionnaire which is internet-based. The survey focuses on the same kinds of data that is collected, using the questionnaire, from a large group of people where relevant patterns can be extracted (Oates, 2006:37), in this case the groups. Surveys are generally used to learn more about what people believe and the opinions that they hold about a particular aspect that is being researched (Neuman, 2006:48). Attitudes and beliefs are quantified using the Likert scale. This was an attempt at a global study because one of the aims of the study is to show the diversity of people that participate on the social networks to illustrate the quality of data that is available.

Data collection instrument

As mentioned earlier, the data was collected using an internet-based questionnaire that was created using Google forms. The questionnaire was self- administered, which reduces the researchers influence (Oates, 2006:221). Also, the respondents have an option to discontinue the process at any point. The web form automatically creates a summary of results and this make the analysis of the data easier. The questionnaire comprised of closed ended questions where respondents are required to choose a pre-coded answer. The responses of this type of questionnaire are quick to analyse (Oates, 2006:223) since the questions have already been coded against the purpose of the study. However, this does not allow the respondents to give their own additional views that may be insightful in the study. This was the only data collection method used.

The research took the form of a survey questionnaire where all questions had Likert scale items to provide the answers. The Likert scale is a common response scale for questionnaires where the positive and negative reactions of respondents are measured. The Likert scale can be used to provide the respondents a statement which allows them to reflect and review their attitude and opinion (De Vaus, 2002:102). In this case the

agreement and frequency Likert were used for the respondents to reflect on their use of social media and to reflect on whether they share and gain knowledge from the social networks that they belong to. Horizontal rating scales were used in both cases and respondents were required to indicate a number between the opposite positions. For the frequency Likert the responses available on a scale of 1-5 were:

- Never
- Rarely
- Occasionally
- Frequently
- Very frequently

The agreement Likert also had a set of five responses available as follows:

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

It should be noted that central tendency bias could result from the inclusion of the Neutral response. This response allows the respondent to neither agree nor disagree which may lead to skewed results.

Description of questionnaire

The questions were arranged according to themes; therefore questions surrounding the same theme were grouped together. The classification of questions is under the themes purpose, internalization, externalization, and utilisation, form of participation and community of practise.

To measure the objectives of the study a re-grouping of the questions was necessary. This re-grouping is based on the key concepts of knowledge sharing according to Becerra-Fernandes *et al.,* (2004: 34); Cheong and Tsui, (2010); Gordeyeva, (2010); Wenger and Snyder, (2000); Davenport and Prusak (1998).

The questionnaire was divided into Sections A, B and C; further to these section divisions, the questions were grouped based on the concepts analysed in the literature review. The groupings in section B and section C were as follows:

Purpose- Q10, Q14, Q15 (c), Q15 (f), Q16;

In this thesis, the purpose is the motive or the reason for participating or joining the social network. Purpose can also be extended to the use of the knowledge gained. Utilisation demonstrates how individuals use the knowledge that they obtain from the social networks in their lives which includes solving problems or applying it in their line of work. The questions identified are the ones that show the reason that users participate in a social network and whether they use the knowledge they gain.

Internalization/ Personal Knowledge Internalization (PKI) - Q9, Q14, 15 (g), 17(a), 17 (b);

These questions demonstrate how the individual converts the explicit knowledge available on the social network to their own tacit knowledge. There are various information retrieval activities that the individual can be involved in. When the individual gets the information from the social media by reading and sometimes commenting to ask for clarification they are converting the shared information to become their own tacit knowledge.

Externalization/ Inter-Personal Knowledge Transfer (IKT) - 14(b), 14(e), 15(d), 17(c);

This set of questions that show how individuals are converting their tacit knowledge to explicit knowledge and making it available on the groups they belong to. Activities such as posting and commenting are knowledge sharing activities where individuals are share their tacit knowledge making it explicit to other social network users. This is evidence of personal knowledge management.

Community of Practise- 14f, 15e, 15f, 12, 17(e);

The CoP questions demonstrate that these groups on social networks are indeed communities of practice and how individuals benefit from belonging to the groups on the social network which provides a conducive environment to interact with diverse people who share similar interests. As indicated in the preceding chapters, no matter how different the intelligence capacity of the individuals, the more they are the better they are at coming up with solutions for problems.

Trust- 14(c), 14(d), 17(d);

These questions are important because trust is an important factor for knowledge sharing (Gordeyeva, 2010:11). These questions show that group members in a social network trust each other and therefore share knowledge readily.

Technological adoption- 15 (a), (b), (d);

These questions demonstrate how individuals have accepted social media as a way of collaboration and how they use it for accessing and organising information. It is important to show whether individuals find it easy to communicate on the groups if any consideration is to be given to the group as a useful PKM tool.

Pilot

Before the questionnaire was distributed a pilot survey test run was performed. During the pilot test, the questionnaire was emailed to 15 individuals for completion. This was done in order to check the clarity of questions within the designed questionnaire. Some respondents found some of the statements unclear and ambiguous despite the information that was in the introduction of the questionnaire. Some respondents found the questionnaire too long and taking too much time. Feedback obtained from participants of the pilot test run was used to re-construct some of the questions in the questionnaire.

Distribution

The questionnaire was posted on the various social-network groups. It was active for a period of one month to allow as many responses as possible. The questionnaire was re-posted on the group walls after every few days to keep it on top of the news feed. No other information was given. The response rate decreased the longer the questionnaire stayed posted. The respondents were not given any motivation to respond to the question. This may have reduced the number of responses and at the same time decreased the bias.

Analysis

The data collection tool was divided into three sections. Section A, was to collect the personal details of the respondent. This was to determine the profiles of the participants on the social networks. Section B was about the use of social networks in general. And finally section C was about the use of group features of the social networks. One thing that has to be noted is that all the people who responded were members of at least one group in a social network.

The responses from participants were analyzed using the data analysis tools embedded in google drive forms. The google drive forms allow one to collect a summary of responses from a questionnaire generated within Google drive in various ways. The summary of responses option was used to analyze the data since it provides graphs and charts that help to describe and visualize the results. The results were also exported from Google drive forms to Microsoft Excel for further analysis. Furthermore, the statistical analysis tools used are Frequency Distribution Tables and Bar Graphs to summarize the responses. Also, the Chi-square statistic was used to test for independence of association between Gender, Qualifications, and the choice of social network groups.

Validity and Reliability

The questionnaire was intended for the purpose of measuring whether individuals benefit from knowledge sharing on the social network groups that they belong to. The study is valid to a greater extent since the questionnaire covers all the questions to aid the investigation (Saunders et al., 1997:366).

The responses from the pilot were consistent with the responses that were received from the actual questionnaire. The research instrument is therefore reliable because the results of the study are repeatable (Bryman and Bell, 2003:33). Most of the participants were able to comprehend the questions posed, as there is a low number of none responses. The responses that were received were sufficient to deduce the meaning

Ethical Concerns

Various ethical concerns emerged during the planning but were all addressed prior to the roll-out of the questionnaire. Anonymity of respondents was ensured because there was no provision to include identification information. Participation was voluntary as the respondents could choose not to participate or to withdraw at any time. Consent was sort from the administrators of the group for the questionnaire to be posted on the wall of the group and I sent the clearance and approval to my research supervisor. Ethical clearance was then sort from the Ethics Committee of the university.

Strength and Limitations of the Research

The limitation of this sampling method is that it has the risk of high bias. Oates (2006:100) describes that this bias may be as a result of the strong feelings held by those who volunteer to participate. These respondents probably hold strong views about the subject already. Moreover, the number of respondents is very small therefore the results of the

thesis cannot be effectively generalized on a larger population. Another limitation of a web survey is that some individuals do not have access to the internet (Bryman and Bell, 2003:509) let alone belong to a social network. However, this study only focuses on individuals who are already using these social platforms.

4.2 Analysis of results

4.2.1 Section A: Demographics

The first part of the questionnaire was the demographics details of respondents. This was necessary to determine the ages, educational levels, positions held and number of years of experience. The aim of this part was to determine if the individuals were intellectuals/ professionals and if they could make meaningful contributions in discussions on the social network. Also, if they are professionals then there is a possibility that they might actually take the information back to their organizations and also share information from their own industry experience. The country was one of the required information. This was used to show the diversity, coverage and the vastness of information that can be found on social networks.

Gordeyeva (2010:10) identified one of the main difficulties of knowledge sharing as the existence of formal hierarchies. This question was aimed to show that despite the various positions held by the individuals, they all communicate at the same level as professionals. The questionnaire therefore excluded users that are part of the social network but are not professionals, because it did not give a choice of unemployed. This is one of the limitations of this paper as it does not accommodate those who have never been employed.

Table 4 shows the ages of the 85 respondents. The table shows that different people of different age groups participate on the social networks. Users over the age of 50 also responded. This is significant because it shows that there may be sharing of wisdom based on their experiences and insights developed over time. The mean is 34.5 years. This is the age group of most professionals. There is thus a possibility that these professionals have used or may use the knowledge shared in their organizations. The standard deviation is 8.14 years and the mode is 29.3 years. The graph in *Figure 6* summarizes the table.

Table 4. Ages of respondents

AGE	NO OF REPONDENTS (f1)	RELATIVE FREQUENCY (%)	STATISTICS OF AGES OF RESPONDENTS DERIVED FROM COLLECTED DATA
21-25	6	7.1	
26-30	30	35.7	*n*=85
31-35	25	29.8	*Mean* = 34.5 years
36-40	5	06	
41-45	5	06	*Standard Deviation* = 8.14years
46-50	2	02.3	
51+	11	13.1	*Mode* = 29.3years
TOTAL	85	100	

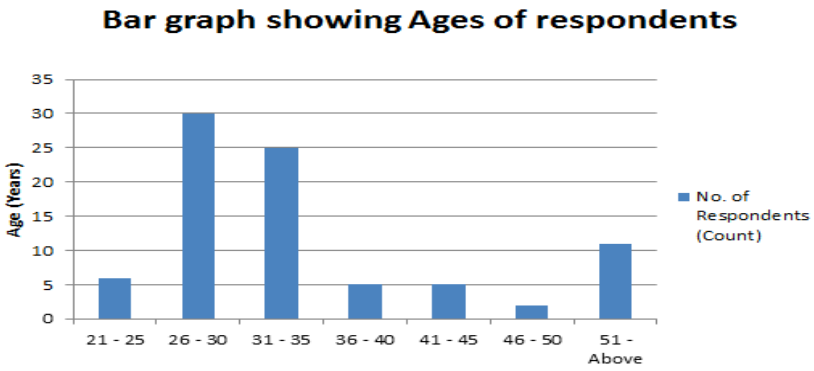

Figure 6. Bar graph showing ages of respondents

From the Table 4, the total number of respondents, *n*, is eighty five. The average age of respondents is 34.5 years which falls under Generation Y, where Generation Y made up of individuals born between 1977-1994 (Schroer, *n.d*). As mentioned earlier, Generation Y and Z and well accustomed to technology and find it easy to use. Based on the above measures of central tendency, it can be deduced that young professionals are more active on social media platforms, and part of their personal knowledge is being managed through the use of social media. The deduction has been made from the sample of 85 respondents. Although the average age is 34.5 years, other age groups outside of Generation Y and Z are also using the social media.

The sections for Gender and qualification were coded using a numeric code for identification purposes only. *Table 5* below represents the ration of males to females who responded to the questionnaire. According to a *Forbes* article women are more active on social networks (Clipson, Wilson and Du Frene, 2012). This is consistent in this research.

GENDER	CODE	NO OF RESPONDENTS	RELATIVE FRQUENCY (%)
Male	1	41	48.2
Female	2	44	51.8
		85	100

Table 5. Gender of respondents

NB: The codes are used for identification purposes only.

The information provided in the frequency distribution *Table 5* for Gender of Respondents can be translated into the bar graph below.

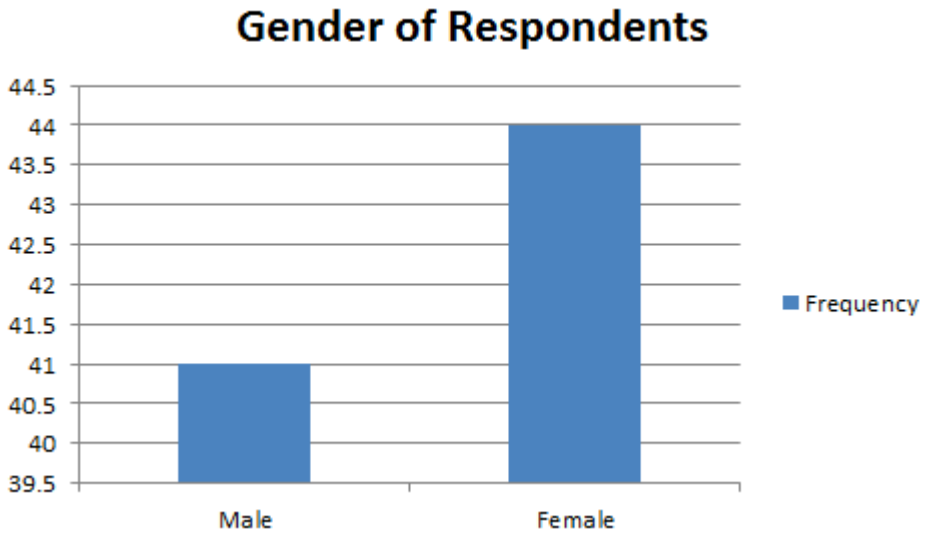

Figure 7. Bar graph for Gender of Respondents

The respondents have various levels of qualifications as shown in *Table 6*. What is clear is that a large number of the respondents have gone through tertiary education that is 71 respondents of the 81 who specified their level of education. It is interesting to note that 33% of the respondents had at least a post-graduate qualification. This can demonstrate the richness in the quality of information shared.

Table 6. Highest Level of Qualification of respondents

QUALIFICATION	CODE	NO OF RESPONDENTS	RELATIVE FRQUENCY (%)
High School	5	8	9.9
National Certificate	6	1	1.2
SRM Global Certificate	7	1	1.2
3 Years Diploma	8	5	6.2
Higher Diploma or 3 years degree	9	19	23.5
4 Years degree or honours	10	20	24.7
Postgraduate	11	26	32.1
Doctorate	12	1	1.2
		81	100

Looking at the frequency distribution *Table 6*, it can be noted that the analysis in the table is based on a sample of 81 respondents. However, from the actual sample of 85 respondents, 4 respondents chose not to disclose their highest attained Level of education. This is depicted in the pie chart in *Figure 8*.

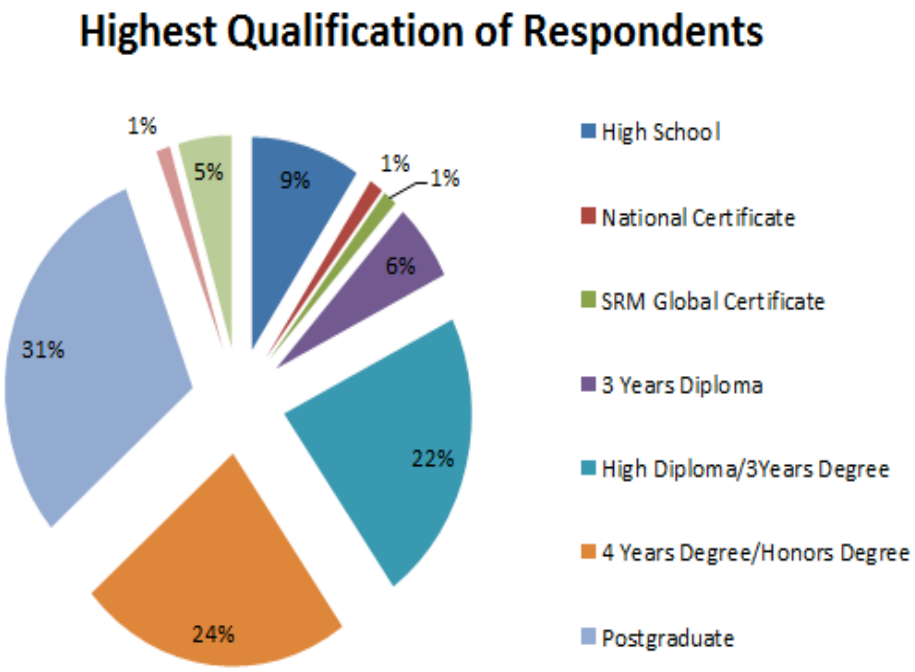

Figure 8. Pie chart illustrating variations in Level of Qualifications Attained by Respondents

Table 7 shows the employment positions of the respondents. The question required the respondent to choose the last position they held if they were currently unemployed. This question was designed to show how the respondents bring their experiences from the positions that they work into the social networks. This also shows how the traditional hierarchical structure which is a barrier to knowledge sharing is done away with on social network platforms were individuals can participate freely.

Table 7. Employment position currently held by respondents

EMPLOYMENT POSITION	CODE	NO OF RESPONDENTS	RELATIVE FRQUENCY (%)
Junior Employee	JE	34	42.5
Senior Employee	SE	18	22.5
Middle Manager	MM	16	20.0
Senior manager	SM	12	15.0
		80	100

However, it is evident from *Table 7* and the pie chart in *Figure 9*, that five respondents (6% of the sample), chose not to disclose their current position. Another interpretation could be that 6% of the respondents were unemployed, although the study had focused on "employed" individuals only.

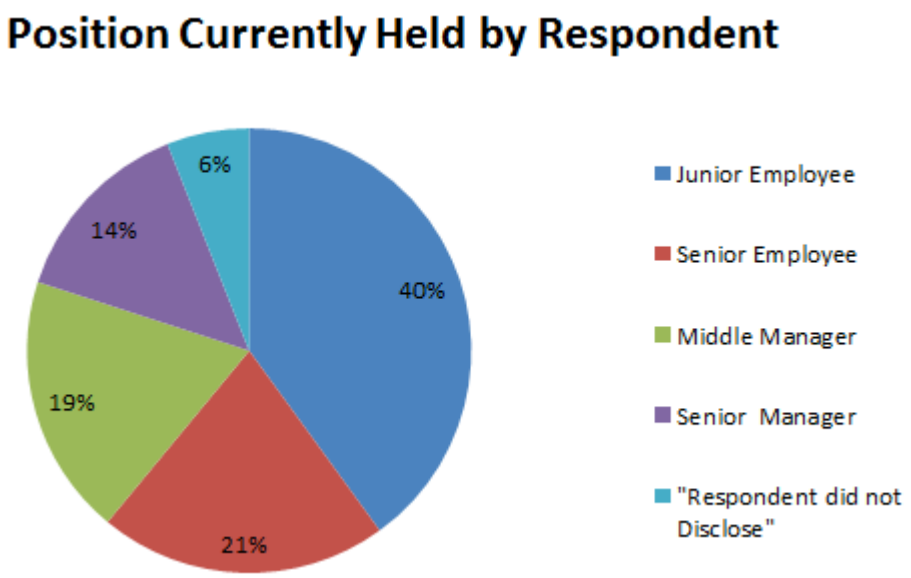

Figure 9. Pie Chart showing a Comparison of Current Positions Held by Respondents

With regards the question on the number of years in current position, a large number of respondents indicated that they have worked for a few years in their current positions as seen in *Table 8*. Despite this, *Table 9* depicts that overally the respondents have relatively more years of experience. As a result they are able to contribute meaningfully in discussions on the social network group based on their previous experiences from positions other than their current positions.

Table 8. Number of years in current position

CATEGORY OF YEARS IN CURRENT POSITION	COUNT	RELATIVE FREQUENCY (%)
1-2yrs	28	33.0
3-4yrs	20	23.5
5yr+	21	24.7
<1yr	9	10.6
none disclosure	7	8.2
	85	100.0

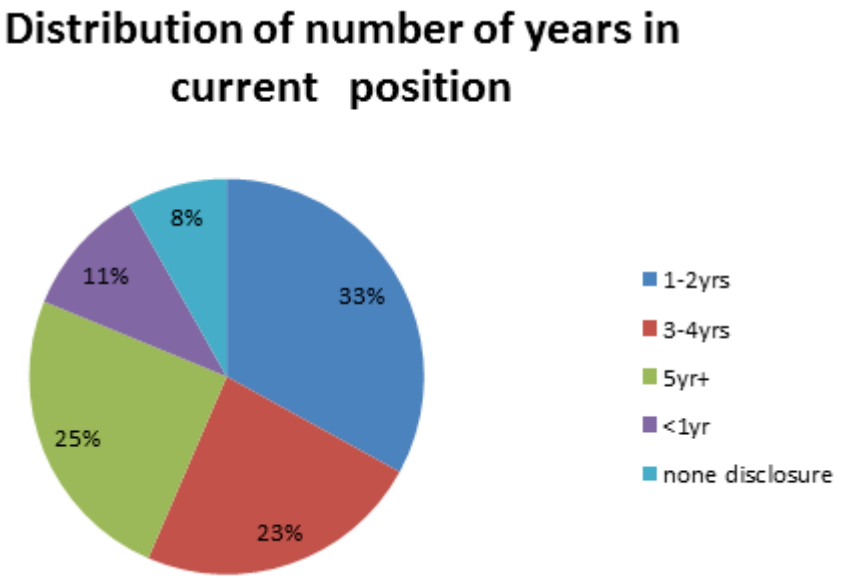

Figure 10. Distribution of number of years in current position

The data in *Table 9* illustrates that there is a variation in the total number of years of industry experience of the respondents. A large number of participants indicated that they have up to two years of experience in their current position. This may imply that they need to learn more about their current jobs. The social network group may become a useful tool to find out more information from others who have worked in similar positions for longer.

Table 9. Total number of years of industry experience

CLASS OF INDUSTRY EXPERIENCE	COUNT	RELATIVE FREQUENCY (%)
1-3yrs	14	16.5
4-6yrs	12	14.1
7-9yrs	26	30.6
10+ yrs.	29	34.1
none disclosure	4	4.7
	85	100.0

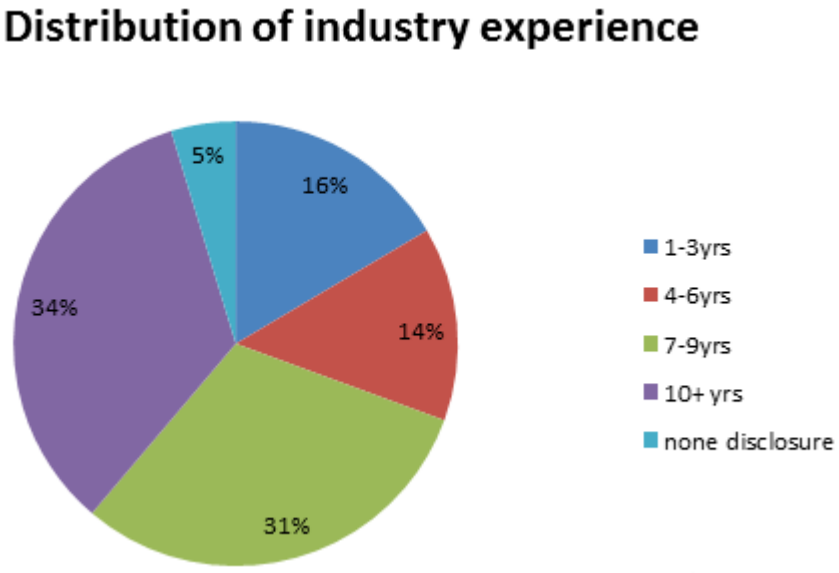

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Figure 11. Distribution of years in industry experience

Table 10 and *Figure 12* show that responses were received from various parts of the globe. Responses were received from a total of 18 countries. This shows diversity of the users of social networks. This kind of response also demonstrates how users are able to share knowledge with others using social networks. The diversity can also be used to imply richness in the type of data or information shared on the social networks. Since the

respondents come from different parts of the world and therefore different organizations, they bring in different solutions based on their cultures. Most responses were received from England, USA, Zimbabwe and South Africa.

Table 10. Location of respondents

COUNTRY	CODE	FREQ	RELATIVE FREQ (%)
Australia	AU	1	1.2
Canada	CA	1	1.2
China	CH	1	1.2
Czech Rep	CR	1	1.2
England	ED	10	12.1
Finland	FI	1	1.2
India	ID	4	4.8
Indonesia	IN	1	1.2
Italy	IT	1	1.2
Namibia	NM	1	1.2
South Africa	SA	34	40.9
South Sudan	SS	1	1.2
U.S.A	U.S	10	12.1
Zimbabwe	ZM	16	19.3
18 Countries		83	100

The chi-square statistical analysis was used to test for independence of association between Gender, Employment position, Qualification and the choice of a social network. This test seeks to establish whether Gender, Qualification, employment position and choice of a social network are independent. Test of association between gender and social network choice at a 5% significance level.

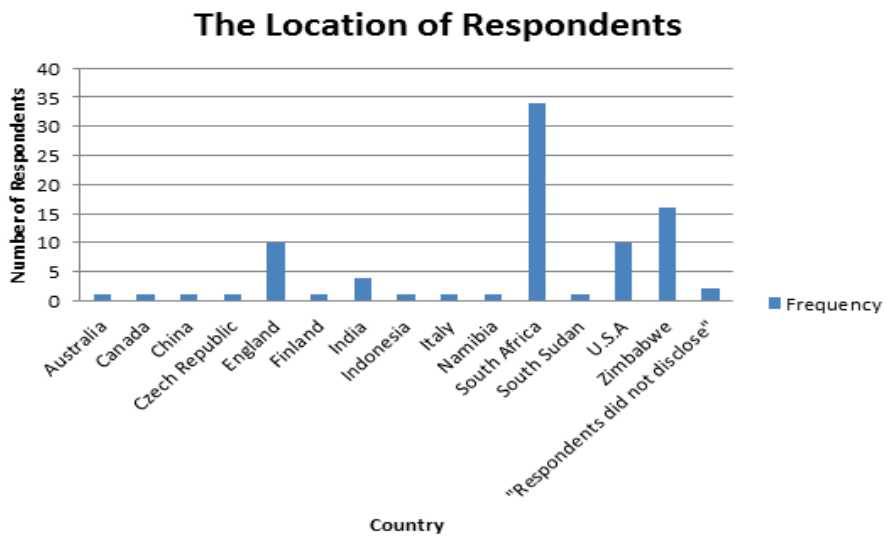

Figure 12. Bar graph showing diversity in location of Respondents

However, from the *Figure 12*, it can be noted that 2 respondents chose not to disclose their country of residence. This can then imply that overally, respondents were actually from 18 countries or even more. This can then make our sample of participants more randomised increasing the credibility of the empirical study results. Furthermore, it can be deduced that the stated countries are from various parts of the world. On the other hand, it can be noted from *Figure 12* that the respondents who participated in the survey are not uniformly distributed to all the 18 countries.

Table 11. Gender association with social networks

Gender	Social networks				
	Facebook Pages	Facebook Group	Google Plus Community	LinkedIn	Row Total
Female	12	17	4	11	44
Male	8	4	4	16	32
Column Total	20	21	8	27	76

Observed frequency table (f_0)

Hypothesis: H_O (Null hypothesis): There is no association between gender and the choice of social network.

H_1 (Alternative Hypothesis): There is association between gender and choice of social network.

Degree of freedom (df) = (r-1)(c-1) r = rows, c = columns

df = (2-1)(4-1) = 3.

α=.05

From chi-square table, $x^2 = 7.815$

If x^2Calc ≤ 7.815, Accept H_0

If x^2 Calc> 7.815, Reject H_0

X^2 Calc = $\Sigma (f_o - f_e)^2/f_e$

Expected Frequency table: (f_e) Calculating f_e = Row total x Column total/Grand total.

Ex: 44 x 20/76 =11.6, 44 x 21/76 = 12.2 (for females)

EX; 32 x 20/76 = 8.4, 32 x 21/76 =8.8 (for Males)

Table 12. Chi-square test for association between gender and choice of network

	Cells	f_0	f_e	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
Females	Facebook Pages	12	11.6	.16	.01
	Facebook Group	17	12.2	4.8	.39
	Google plus Community	4	4.6	.36	.08
	LinkedIn	11	15.6	21.16	1.36
Males	Facebook Pages	8	8.4	.16	.02
	Facebook Group	4	8.8	23.04	2.62
	Google plus Community	4	3.4	.36	.11
	LinkedIn	16	11.4	21.16	1.86
X^2Calc					6.45

Conclusion: Chi square sample statistic (x^2Calc, 6.45) is less than chi square limits from the table (7.815), H_O should be accepted. This means that at a 5% level of significance, Gender and social network choice are independent i.e. they are not associated to one another and therefore gender does not influence choice of social network

1. Test of association between employment position and social network choice at a 5% significance level.

OBSERVED FREQUENCY TABLE Calculating f_e = Row total x Column total/Grand total.

Table 13. Chi-square test for association between employment position and choice of social network

Employment Position	Facebook pages	Facebook Group	Google+ Community	LinkedIn	Row Total
Junior Employee	5	8	2	7	22
Middle Manager	7	7	4	8	26
Senior Employee	8	4	1	5	18
Senior Manager	1	1	0	8	10
Column Total	21	20	7	28	76

H_O: There is no association between employment position and choice of social network.

H_1: There is association between employment position and choice of social network.

df = (r-1)(c-1) ,(4-1)(4-1) = 9

$\alpha = 0.05$

From chi-square table, $x^2 = 16.919$.

If x^2Calc ≤ 16.919, Accept H_O

If x^2 Calc> 16.919, Reject H_0

X^2 Calc = $\Sigma (f_o - f_e)^2/f_e$

EXPECTED FREQUENCY TABLE: Calculating f_e = Row total x Column total/Grand total.

Table 14. Frequency table of membership in groups based on employment position.

Employment Position	Facebook pages	Facebook Group	Google+ Community	LinkedIn	Row Total
Junior Employee	6.1	5.8	2.0	8.1	22
Middle Manager	7.2	6.8	2.4	9.6	26
Senior Employee	5.0	4.7	1.7	6.6	18
Senior Manager	2.8	2.6	0.9	3.7	10
Column Total	21	20	7	28	76

Conclusion: Chi square sample statistic (x^2Calc, 13,146) is less than chi square limits from the table (16.919), H_O should be accepted. This means that at a 5% level of significance (α=0, 05), Employment position and social network choice are independent i.e. they are not associated to one another and therefore position does not influence choice of social network. Individuals at various employment positions can belong to any social network. As a result, the knowledge that is shared on the various social networks is of high quality since there can be contributions from various individuals.

2. Test of association between qualification and social network choice at a 5% significance level.

Table 15. Chi square analysis of frequency table of membership in groups based on employment position

Employment Position	Cell	f_o	f_e	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
Junior Employee	Facebook pages	5	6.1	1.21	0.1983607
	Facebook Group	8	5.8	4.84	0.8344828
	Google Plus Community	2	2.0	0.0	0.0
	LinkedIn	7	8.1	1.21	0.1493827
Middle Manager	Facebook pages	7	7.2	0.04	0.0055556
	Facebook Group	7	6.8	0.04	0.0058824
	Google Plus Community	4	2.4	2.56	1.0666667
	LinkedIn	8	9.6	2.56	0.2666667
Senior Employee	Facebook pages	8	5.0	9.0	1.8
	Facebook Group	4	4.7	0.49	0.1042553
	Google Plus Community	1	1.7	0.49	0.2882353
	LinkedIn	5	6.6	2.56	0.3878788
Senior Manager	Facebook pages	1	2.8	3.24	1.1571429
	Facebook Group	1	2.6	2.56	0.9846154
	Google Plus Community	0	0.9	0.81	0.9
	LinkedIn	8	3.7	18.49	4.9972973
X^2Calc					13,146424

Table 16. Frequency table of membership in groups based on qualification

Qualification	Facebook pages	Facebook Group	Google Plus Community	LinkedIn	Row Total
High School	0	2	2	1	5
Higher Diploma	6	5	2	7	20
4 Years degree	6	5	3	4	18
Post Graduate	6	5	0	15	26
National Certificate	0	0	1	0	1
SRM Global Certificate	0	0	0	1	1
3 Years Diploma	2	3	0	0	5
Doctorate	1	0	0	0	1
Column Total	21	20	8	28	76

$H_{O:}$ There is no association between qualification and choice of social network.

H_1: There is association between qualification and choice of social network.

df = (r-1)(c-1) ,(8-1)(4-1) = 21

$\alpha = 0.05$

From chi-square table, $x^2 = 32.671$

If x^2Calc ≤ 32.671, Accept H_O

If x^2 Calc> 32.671, Reject H_0

X^2 Calc = $\Sigma (f_o - f_e)^2/f_e$

EXPECTED FREQUENCY TABLE: Calculating f_e = Row total x Column total/Grand total. Determining X^2 Calc = $\Sigma (f_o - f_e)^2/f_e$

Table 17. Chi- square analysis of frequency table of membership in groups based on qualification.

Qualification	Cell	f_o	f_e	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
High School	Facebook pages	0	1.38	1.90	1.38
	Facebook Group	2	1.32	0.46	0.350303
	Google Plus Community	2	0.53	2.16	4.0771698
	LinkedIn	1	1.84	0.71	0.3834783
Higher Diploma	Facebook pages	6	5.53	0.22	0.0399458
	Facebook Group	5	5.26	0.07	0.0128517
	Google Plus Community	2	2.11	0.01	0.0057346
	LinkedIn	7	7.37	0.14	0.0185753
4 Years degree	Facebook pages	6	4.97	1.06	0.2134608
	Facebook Group	5	4.74	0.07	0.0142616
	Google Plus Community	3	1.89	1.23	0.6519048
	LinkedIn	4	6.63	6.92	1.043273
Post Graduate	Facebook pages	6	7.18	1.39	0.1939276
	Facebook Group	5	6.84	3.39	0.4949708
	Google Plus Community	0	2.74	7.51	2.74
	LinkedIn	15	9.58	29.38	3,0664301
National Certificate	Facebook pages	0	0.28	0.078	0.28
	Facebook Group	0	0.26	0.07	0.26
	Google Plus Community	1	0.11	0.79	7.2009091
	LinkedIn	0	0.37	0.14	0.37
SRM Global Certificate	Facebook pages	0	0.28	0.08	0.28
	Facebook Group	0	0.26	0.07	0.26
	Google Plus Community	0	0.11	0.01	0.11

	LinkedIn	1	0.37	0.40	1.0727027
3 Years Diploma	Facebook pages	2	1.38	0.38	0.2785507
	Facebook Group	3	1.32	2.82	2.1381818
	Google Plus Community	0	0.53	0.28	0.53
	LinkedIn	0	1.84	3.39	1.84
Doctorate	Facebook pages	1	0.28	0.52	1.8514286
	Facebook Group	0	0.26	0.07	0.26
	Google Plus Community	0	0.11	0.01	0.11
	LinkedIn	0	0.37	0.14	0.37
X^2Calc					31,898

Conclusion: Chi square sample statistic (x^2Calc = 31,898) is less than chi square limits from the table (x^2 = 32,671), H_O should be accepted. This means that at a 5% level of significance (α=0,05), qualification and social network choice are independent i.e. they are not associated to one another and therefore qualification does not influence choice of social network.

Question 8 – is aimed at finding out the number of social networks that users belong to. This shows the popularity of social networks. When we consider the number of social networks users belong we may assume that the reason they belong to various networks is because of the benefits they gain. Moreover, different platforms have different users so the possibility of discovering new things is increased the more networks a user belongs to.

Seeing that section B of the questionnaire was about how and individual uses social networks in general, the respondent was required to select the groups that they belonged to. The results show that the respondents belonged to various social networks platforms, including some that were not given as an option to select from. Because the respondents belonged to more than one social network platform responses were grouped by the choice of social networks. The grouping shows the number of times that the three networks Facebook, Google plus and LinkedIn were selected regardless if they were chosen in association with another network. This overwhelming response shows that users are

joining groups not only on one network but on various networks. This may be as a result of the different connections they make and therefore the different knowledge they may gain from various platforms- the more the groups they join the more exposure they get from the group.

To determine which social network is preferred by respondents, a ranked order principle was used. All the network groups (combination of different social networks) were assigned a 2 next to it. To determine the score of each social network in this group, the group frequency was multiplied by 2 and the product recorded under each of the social networks in the group. The resulting scale values representing the Ordinal scaling, with high scores representing the social networks (Facebook, Google+ community, LinkedIn etc.) chosen by the respondents most. *See Table 2.1 in Appendix B*. Using the order ranking, Facebook is ranked first, LinkedIn Second, Google+ community third. The chart below shows that each of the three social networks that this study focuses on was chosen all the time. Other networks that were not identified in this study were also mentioned.

Figure 13. Membership on social networks in general

Question 9- How do you participate in your social network (in general)?

This question was derived from the paper by Maia *et al.,* (2008) on identifying user behaviour in online social networks. The purpose of this question is to find out if people belong to social networks but are not active on these social networks. The fact that a user decides to belong to a social network means that they are interested in some sort of participation. This question attempts to find out the frequency of the activities that have

been listed. The activities chosen are the generic activities that are done on social networks.

Scanning newsfeed mean that user reads through the posts, looks at pictures or videos and also links shared. A post can be a question, a suggestion, a remedy, a contribution, a best practise, a new discovery, a recommendation, a solution. Some newsfeed are pictures that are used for identification of product or people, things that are popular and applauded or discouraged. Videos may be for the same purpose as pictures and additionally may be instructional for example, "how to" videos. The concept illustrated is the *Internalisation/ PKI.*

Reading some updates means that the user chooses to read some updates that are interesting to them and not all the updates. These may be updates from influential people or updates that they find important to them. The concept illustrated by this question is *Internalisation/ PKI* as described earlier in this chapter.

Reading comments means that in addition to the post that is on the platform, the user reads the comments of other users. This means that they have read or scanned the newsfeed and would like to find out what other people's views on the subject is. The concept illustrated by this question is *Internalisation/ PKI* as described earlier in this chapter.

In addition to reading comments only the user can also post new updates which mean that they can also express their opinion about the topic. The concept illustrated by this question is *Internalisation/ PKI and Externalisation/IKT* as described earlier in this chapter.

There are other users who do not read other comments but only prefer to share their opinion. The user reads the newsfeed and has a strong opinion that they believe stand by and therefore they are only interested in sharing this information The concept illustrated by this question is *Externalization/IKT* as described earlier in this chapter. The question (Q9) is about how the respondent participates on the social network. One can be an enthusiast or a free rider. A free-rider just wants to enjoy the contents that have been made public by others (Maia *et al.,* 2008:3).

An enthusiast is involved in the activities that were given as choices in this question. The responses show that respondents are involved in some activities on the social network platform more frequently than never. The graph below also shows that the participants always read some updates or some comments as none of them chose "never" for this question. This shows that the respondents are involved in some process of internalization.

The question also shows externalisation where the user is asked if they "post" new updates. This means that if the individual has something to share they do so and the results shows that this is also more often than never. A large number of respondents (at least 90%) indicated that they scan newsfeed, read update and read comments. This response is remarkable.

Figure 14. Participation on social networks

Table 18. Participation on social networks

	Never	Rarely	Occasionally	Frequently	Very Frequently	Total
I scan the newsfeed	5 (5.3%)	1 (1.3 %)	23 (30.3%)	33 (43.4%)	15 (19.7%)	76 (100)
I read some updates	0 (0)	3 (3.9%)	25 (32.9%)	36 (47.4%)	12 (15.8%)	76 (100)
I read comments	0 (0)	3 (4.1%)	26 (35.6%)	33 (45.2%)	11 (15.1%)	73 (100)
I read comments and post new updates	3 (3.9%)	14 (18.4%)	19 (25.0%)	34 (44.6%)	6 (7.9%)	76 (99.8)
I only comment	5 (6.6%)	24 (31.6%)	29 (38.2%)	17 (22.4%)	1 (1.3%)	76 (100.1)

Question 10-For what Purpose do you use your account?

This question was designed to show that individuals do not go to social networks superfluously. A set of sub-questions that served as propositions of possible purposes that users used social networks for was given. These were constructed with an alignment to activities that may show the existence of knowledge sharing.

The first sub-question was however was constructed from the general view that social networks such as LinkedIn are used primarily for job search.

Networking to find experts is linked to the question of trust that is posed in Section C. The trust is based on reputation that the individuals have. One of the ways that the reputation is established is by identifying experts. This may be done from recommendations or referrals or simply by viewing the user's profile. Specific to LinkedIn is a feature called Endorsement that shows individual's areas of expertise. Networking for experts is given because usually users trust people that have been established as experts and therefore believe that the information they share is useful.

Networking for jobs is also suggested because social networks have been viewed as being used mainly to look for jobs for example LinkedIn. The results of this study are consistent with this view but also indicate that it is not the only purpose that individuals use social networks. The responses show that the majority of the respondents use their account for a particular purpose as the level of disagreement to the suggested uses is low as illustrated by the graph below.

Figure 15. Purpose for using a social media account

The respondents generally agree with the statements to a greater extent. This shows that these are some of the main uses of the social networks. Further analysis shows that at least 77% of the respondents look for new information; 60% look for solutions to problems; and 70% visit with a view to learn new things with 58% agreeing to looking for experts.

All this shows that the social network groups are a place where people gain knowledge from that is why they use it mainly for this purpose.

The statement of Networking for jobs received 43% respondents who agreed. This shows that this is not the main reason why respondents use social networks as opposed to one of the assumptions that social networks such as LinkedIn are mainly used to look for jobs.

A significant number of respondents were neutral which is worrying because this may be a positive or negative indication.

Question 11- Select the group feature that you participate in on these social networks.

This section, in addition to being members of a social network, individuals were asked to indicate the group feature that they mostly used. It is one thing to be a member of a social network, for this study the aim is to show how groups on social network promote knowledge sharing. The section that follows was based on the response from this question.

The results from this question show that Facebook is the most popular of the social networks that are being considered in this study. 77 respondents have indicated that they use the groups on social networks. This shows that participation on groups is high. Google+ Community has the lowest number of users. This is contrary to the current statistics that it is the second ranked social network. This contrast may be as a result of the fact that most individuals use Google+ in general as opposed to its Community feature.

Table 19. Group feature that you participate on your social network

Social network	**Frequency**	**Relative Frequency (%)**
Facebook Pages	22	28.6
Facebook Groups	20	26.0
Google Plus Community	8	10.4
LinkedIn	27	35.1
TOTAL	77	100.1

The following section was based on the choice of group mentioned in the preceding question. Section C was based on the participation on the group specifically. 44 people (53%) of respondents belong to at least 2 different networks and 6 (7.2%) belong to groups in more than 3 different networks (*see table 3.1*). It should also be noted that Facebook is the most preferred social network groups.

4.2.2 Section B Social Networks in general

The common consensus is that social networks are used for socialization and for personal interactions. Some studies (Vossen and Hagemann, 2007; Ullrich *et al*., 2008) have shown that the social networks are being used for more than just socialization in businesses and research. This section aims to show consistence with these recent studies that there are more than social interactions on social networks. In this paper the aim is knowledge sharing on the social networks; therefore this section shows how users participate on their social network platform.

Table 20. Social network groups that individuals belong to.

No of network groups	No of people (Freq)	Relative Freq (%)
1	4	5.1
2-5	34	43.0
More than 5	23	29.1
More than 10	18	22.8
TOTAL	79	100

13. *In general, what determines your choice to join a specific group?*

1. It is in line with my profession. (coded as 1)
2. It is a field that I would like to explore.(coded as 2)
3. It was recommended by the social network. (coded as 3)
4. It was recommended by a friend. (coded as 4)

NB: These codes are used to facilitate recording of information on the table since respondents were choosing more than one answer. The first response is represented by 1 and the second by 2 etc.

Table 21. Factors determining choice of specific group

Determinant Combination	Freq	Relative Frequency (%)	Ranking code (2)	Determinant 1	Determinant 2	Determinant 3	Determinant 4
1,2,3,4.	7	8.8	2	14	14	14	14
1,2,3	4	5.0	2	8	8	8	0

1,2,4	10	12.5	2	20	20	0	20
1,2	12	15.0	2	24	24	0	0
1,3	1	1.3	2	2	0	2	0
1,4	7	8.8	2	14	0	0	14
3,4	1	1.3	2	0	0	2	2
1	12	15.0	2	24	0	0	0
2	13	16.3	2	0	26	0	0
3	0	0.0	2	0	0	0	0
4	13	16.3	2	0	0	0	26
TOTAL	80	100.3		**106 Scores**	**92 Scores**	**26 Scores**	**74 Scores**

NB: To determine which reason has a greater influence on the choice of network, a ranked order principle was used. All the determinants i.e. reasons, (combination of different determinants) was assigned a 2 next to it. To determine the score of each determinant in this group, the group frequency was multiplied by 2 and the product recorded under each of the determinant in the group. The resulting scale values -Total score, represents the number of respondents who chose that determinant.

From *Table 21*, most of the respondents, a score of 106, indicated that they choose to join the networks because it is line with their profession.

4.2.3 Section C: Social Networks Groups

In this section the questions were structured to focus on the groups on social networks. Based on the selection in the previous question, respondents were required to reflect on their use of the group feature to determine if knowledge sharing was apparent on social network groups.

Question 12- How many groups do you belong to on the various social networks?

This question was designed to show that individuals belong to various groups. The reason for joining multiple networks maybe because the users get benefits from these social networks. Also the aim was to show that there is a lot of social presence amongst the respondents of the questionnaire. Recently many individuals spend more time on social networks than socializing personally. The question excludes the option of none because the target population are those that use social network groups.

The results in this question show that the majority of the respondents belong to more than one group. Only 4% of the respondents belong to a single group. This result is very positive to show that users are very much inclined to joining social network groups. If this is the case the next question attempts to obtain an understanding of the reasons that may influence users to join a specific network.

Question 13- In general, what determines your choice to join a specific group?

This was an attempt to establish the possible reasons for individuals choosing a particular group in the social network. This question is aimed at illustrating that groups are comprised of individuals in the same profession and also with the same interests. Other options given are recommendation by a friend or by the social network may also be as a result of the same. The social networks generally recommend connections or groups that may interest you. Usually this is based on your profile or the other connections that you have. As a result, you may still be recommended to your professional groups. Friends also recommend groups that are normally in line with your profession or that may interest you since they already know your interests and your profession. The question gives an option for the user to provide other reasons for choosing the network so that they are not limited to these choices. Groups are different from the social networks in general because the choice to join a group is proactive choice that the individual makes that may be beneficial.

The results from this question show that 34% of respondents selecting joining because it is in line with their profession and 27% joining because it is a field that they would like to explore. 23% joined because it was recommended by a friend. All these reasons are strong indicators that users of the group feature are part of a community of practice as described above.

Among the responses, 7% indicated other. Two respondents specified that the other reason for joining the group was “to keep I touch with individuals from past jobs” and another respondent indicated that the reason was to “enrich their non-work life”. The other respondents who selected other did not provide the information.

Question 14 – How do you use the groups on Social networks?

Figure 16. The use of the groups on the social network?

Davenport and Prusak(1998) stated that for knowledge to be transferred effectively both transmission and absorption have to take place and this should result in a change in behaviour or the development of new ideas. This assumption inspired the question 14(a) and (d). The two statements show that individuals do not only share knowledge on the social networks but also use the knowledge in various contexts. The question of trust (Gordeyeva, 2010:10) is also illustrated by the statement on reputation. This statement was also used to show that trust is critical when it comes to using the knowledge that is shared. If there is no trust then people are not likely going to use the information that have acquired. The individuals with reputation which may be as a result of their profile information ,experts or the helpful information that they usually provide, knowledge sellers are normally trusted Q14 (c), (d) and Q17 (d).

Davenport and Prusak (1998) "Knowledge market transactions occur because the participants believe that they will benefit from them in some way." The statements 14 (e); and in *Question 16*, 17 (c) and (e) were influenced by this assumption. Reciprocity is key

element in knowledge sharing because that is how the quality and amount of information improves (Q14 (e) and Q 16 (c)). The fact that one day an individual will be a buyer on the market motivates them to share the knowledge. If there is reliance on certain individuals only to contribute then the information would not be as vast. Therefore, the users have to exchange knowledge and not receive only. *Figure 16 and Table 22* show the responses for this question.

Table 22. The use of groups on the social network

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
a. I have used the information from the group as a solution to a problem	2 (2.6%)	19 (24.4%)	11 (14.1%)	36 (46.2%)	10 (12.8%)	78 (100.1)
b. I wish to share my knowledge with the group	2 (2.6%)	8 (10.5%)	20 (26.3%)	39 (51.3%)	7 (9.2%)	76 (99.9)
c. I share knowledge in the group, because I trust the members	8 (10.4%)	12 (15.6%)	31 (40.3%)	23 (29.9%)	3 (3.9%)	77 (100.1)
d. I prefer to use knowledge coming from people with high group reputation	4 (5.3%)	12 (15.8%)	31 (40.8%)	24 (31.6%)	5 (6.6%)	76 (100.1)
e. I am motivated to share knowledge by the fact that my own questions may be answered by others in the future	2 (2.6%)	10 (13.2%)	22 (28.9%)	35 (46.1%)	7 (9.2%)	76 (100)
f. Information shared is valuable because of the vastness of the collective experience of the group	1 (1.3%)	10 (13.2%)	19 (25.0%)	34 (44.7%)	12 (15.8%)	76 (100)
g. My use of the groups feature is directly work-related	8 (10.5%)	20 (26.3%)	25 (32.9%)	17 (22.4%)	6 (7.9%)	76 (100)
h. My use of the groups feature is indirectly work-related.	10 (13.5%)	16 (21.6%)	29 (39.2%)	14 (18.9%)	5 (6.8%)	74 (100)
i. My use of the groups feature is primarily social.	13 (16.9%)	14 (18.2%)	18 (23.4%)	24 (31.2%)	8 (10.4%)	77 (100.1)
j. Work-related insights are sometimes the unintended result of my social use of the groups feature	4 (5.3%)	15 (20.0%)	29 (38.7%)	21 (28.0%)	6 (8.0%)	75 (100)

Most respondents agreed with statement 14 (a) which shows that most of the knowledge gained is actually applied. The respondents do not just gain information and not use it. They implement the solutions and best practises that they obtain from the interactions on the social network. This also shows that the information shared is useful in context.

The responses to statement 14 (b) shows that users are motivated to also share the knowledge that they have. A larger number of respondents indicated that they are willing to share their knowledge. There is therefore notable externalisation of knowledge that takes place on the social network groups.

Consistent to the assumption made earlier based on the paper by Gordeyeva (2010:10) that trust is not an issue that hinders knowledge sharing. The questions in 14 (c) and (d) focus on trust in sharing and use of information. The results show at least 40% of the respondents being neutral. This shows that it is not the main factor that influences the knowledge sharing on social networks, it does not really affect whether a user is going to share their knowledge or not; nor whether the user will use the knowledge gained. However, a larger number of respondents indicated that trust is affects their use of knowledge or sharing of knowledge more than the number of respondents who disagreed. Therefore, this assumption may be considered to be true.

The responses to 14 (e) shows that reciprocity is a factor that influences knowledge sharing to a larger extent. A larger number of respondents agree with this statement. This supports the working knowledge theory of knowledge markets. The social networks as knowledge markets consist of buyers and sellers of knowledge.

The responses in question 14 (f) shows that respondents also feel that the global outreach of the social networks makes the content that is shared richer because of different cultures and economies. This supports the statement in section A on the location which showed that even the respondents where from various parts of the globe.

Question 14 (g), (h), (j) had most respondents choosing to be neutral. An average of 32% respondents for these questions disagreed with this. This was a disappointing result. This shows that most users use the group feature on their personal capacity and rarely link it with their work life. According to Choi (2006), one of the factors that facilitate activity on the community of practise is “creation of work-related knowledge and sharing of expertise in community of practise participation”. It should be noted that at least 25% of the respondents agreed to these statements.

Question 15- Please state your view on social network groups.

This question was to determine how the individuals’ view about the groups on social networks. The first statement compares the communication to direct communication as some scholars’ hold that users prefer to communicate on social networks more than direct communication.

The second statement is about the technological aspects of the social networks. Technological adoption is less when the technology is difficult to use. In the McKinsey article (Chui *et al*., 2012:3) it is said that social technologies have been adopted much faster than technologies that came before them.

Figure 17. Views about groups on social network groups

The third statement seeks to determine how the individuals perceive the social network users behaviour. If the individuals view the social network as a platform where people bring their problems to look for solution then it can be assumed that the individuals go there to assist in solving the problems or to learn from the solutions that are provided or discovered.

The statement in 15(d) is a direct attempt to determine if respondents find the group as a useful feature amongst the other social network features to be used for knowledge sharing. The succeeding statement reinforces this because the group allows diversity in the sense that it is not limited organizationally, geographically, or only to the people you know. Thus, the question is used to determine if the respondent also views this diversity as important for knowledge sharing.

The statement in 15(f) is to determine whether the group is really a community of practise where individuals within the same profession or area of interest meet to share ideas and experiences. The question assesses whether the knowledge gained may be useful in the organization or applied in the work context. The last statement in 15 aims to determine if they are actual knowledge benefits from the social interaction.

Table 21. Views about groups on social network.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
a. Social networks communication within a group is preferable to direct communication	4 (5.2%)	17 (22.1%)	30 (39.0%)	24 (32.2%)	2 (2.6%)	77 (100.1)
b. It is easy to use the group feature on social networks	2 (2.6%)	3 (3.9%)	9 (11.8%)	55 (72.4%)	7 (9.2%)	76 (99.9)
c. Users turn to their groups for information to solve problems.	0 (0)	8 (10.4%)	17 (22.1%)	46 (59.7%)	6 (7.8%)	77 (100)
d. The group feature makes sharing knowledge easy	0 (0)	5 (6.6%)	7 (9.2%)	56 (73.7%)	8 (10.5%)	76 (100)
e. The group feature gives access to a large diversity of people.	0 (0)	4 (5.3%)	5 (6.6%)	48 (63.2%)	19 (25.0%)	76 (100.1)
f. The group feature gives me access to relevant knowledge for my work	5 (6.4%)	12 (15.4%)	17 (21.8%)	33 (42.3%)	11 (14.1%)	78 (100)
g. Problems and solutions posted on the group increases knowledge	0 (0)	5 (6.6%)	15 (19.7%)	45 (59.2%)	11 (14.5%)	76 (100)

Question 16- How often do you get what you are looking for?

Question 16 was designed to verify the extent to which the users get what they are looking for on the social networks. This can be viewed as a follow up to question 10 about the purpose for using social networks. Therefore the phrasing of the two questions is similar. This question was an attempt to show that social networks groups are beneficial since people go there for a particular purpose which is fulfilled.

Figure 18. Availability of information on the social network group

At least 73% of respondents highlighted that they agree that social network groups stimulate collaboration and that they find solutions to their problems. This is a very positive indication about the benefits that the user gets from the social networks. The statement on finding experts also received a large number of positive responses. This can be linked back to the element of trust on social networks. The other statements are true but to a lesser extent. This indicates that although these activities are evident on the social network, they are not as apparent as the ones mentioned above.

Table 24. Availability of information on the social network group

	Never	Rarely	Occasionally	Frequently	Very frequently	Total
a. I find solutions for problems	3 (3.9%)	10 (13.0%)	35 (45.5%)	26 (33.8%)	3 (3.9%)	77 (100.1)
b. I find suitable job advertisements	12 (16.0%)	22 (29.3%)	24 (32.0%)	16 (21.3%)	1 (1.3%)	75 (99.9)
c. I am able to identify experts	4 (5.2%)	15 (19.5%)	32 (41.6%)	19 (24.7%)	7 (9.1%)	77 (100.1%)
d. It stimulates collaboration between me and others	2 (2.7%)	10 (13.5%)	30 (40.5%)	25 (33.8%)	7 (9.1%)	74 (100.1)
e. I make new business contacts	7 (9.3%)	15 (20.0%)	26 (34.7%)	22 (29.3%)	5 (6.7%)	75 (100)
f. I make new friends	8 (10.8%)	16 (21.6%)	29 (39.2%)	16 (21.6%)	5 (6.8%)	74 (100)

Question 17- Please evaluate the following statements as they pertain to the community and your wall.

Question 17 was aimed at giving a comparison between the social network wall feature and the group feature. *Figure 19* depicts the responses of the participants. The wall has been described earlier as the default page of a user. On the wall only the feeds that come from your direct relations are seen. The group in contrast offers a connection to other individuals that you may not know but are in the same line of work as you are. The posts on the group can only be viewed after membership has been obtained. This question analyses the behaviour on the group in contrast to that of the wall to establish the elements of the group that make it more suitable for knowledge sharing than the wall. Interesting to note is the statement 17(c) on the precaution that a user takes before posting to the group. This was designed following the assumption that writing for a global audience requires more accuracy because it is more exposed to scrutiny. This is related to the statement to trusting the information posted on the group more 17(d) because the individuals believe that the same care that they put and the research and verification that they do is the same from all the group members.

Figure 19. Views about the community and your wall.

Table 25. Views about the community and your wall.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
a. When I need certain information I look for it by posting the question on my community in contrast to my wall.	2 (2.6%)	17 (21.8%)	22 (37.2%)	29 (37.2%)	8 (10.3%)	78 (100.1)
b. I obtain new knowledge on the community to a larger extent than on my wall.	3 (3.8%)	13 (16.7%)	21 (27.0%)	31 (39.1%)	10 (12.8%)	78 (100)
c. I take more care to provide accurate information on the community as opposed to my wall.	4 (5.1%)	12 (15.4%)	21 (26.9%)	35 (44.9%)	6 (7.7%)	78 (100)
d. I trust the content shared on the community more than the content shared on my wall.	3 (3.9%)	17 (22.1%)	27 (35.1%)	25 (32.5%)	5 (6.5%)	77 (100.1)
e. By participating on the community I can interact and benefit from individuals across the globe as compared to the limitation on my wall	2 (2.6%)	7 (9.1%)	18 (23.4%)	37 (48.1%)	13 (16.9%)	77 (100.1)

4.3 Conclusion

In this chapter the results from the survey were analysed and explained. Each question and sub-question was described. The results of the survey show that users are highly involved in various activities on the social media groups such as posting, reading posts and

comments, commenting and also like-'ing'. In participating in such activities users are either learning new things or they are sharing the knowledge that they have. It shows that groups allow PKM through retrieval, organization, analysing and securing information through the users' participation.

Again, from the analysis made in sub-section 4.2.3 and critical literature review on problems and challenges in knowledge sharing in sub-section 2.6, empirical results for this thesis are consistent with the notion that trust is not one of challenges noticeable in social network groups when group members are sharing knowledge with each other. In fact, social networks groups overcome the challenges identified earlier.

It also shows that social media groups do not limit participation to an individual's usual context but rather it spans across different geographical area and thus empowering the knowledge worker in the organisation. The groups have a world-wide affiliation of members. This means that if the group is an IT group it brings together individuals who are using different technologies in the world so that they can learn from each other and possibly discover best practices and new ways of doing things.

CHAPTER 5

5. CONCLUSION

Traditional literature reflected a variety of core processes of knowledge management. April and Izadi (2004:63-114) have considered knowledge conceptualisation, knowledge codification, knowledge utilisation, knowledge sharing and distribution, and knowledge review and monitoring as the processes that result effective knowledge management. Bercera-Fernandez *et al*., (2004:32) consider the following knowledge management processes, knowledge discovery, knowledge capture, and knowledge sharing and knowledge application as the core of knowledge management initiatives. All of these processes are very important to knowledge management. On analysis of these processes it can be seen that at the centre of each of these processes is the individual who is the knowledge worker. The knowledge worker is involved in discovering or conceptualising the knowledge, capturing the knowledge, utilising and sharing the knowledge. In other words, it is the individual who undertakes each part of these processes

Recent research studies have largely considered, in addition to previous research findings, that Web 2.0 has a significant role in knowledge management (Ullrich *et al.*, 2008; Razmerita *et al*., 2009; Schneckenberg, 2009). This is because they enhance communication and collaboration which results in greater knowledge sharing and creation. Web 2.0 is especially useful because it has a global reach and it allows diverse individuals to interact and to share. Peer to peer networks are created on Web 2.0 that allow mutual benefits among the participants.

However, for the purpose of this research it was considered that, in addition to all of the above, it was necessary to also highlight and elaborate the role of the group feature on social media. On social media individuals are involved in personal knowledge management through posting, commenting, like-ing and even observing. Users share their insights, experiences and knowledge through creating posts and starting discussions. Commenting is also a knowledge sharing activity because the comments are usually based on what the individuals know. Liking is usually done to demonstrate agreement with the post or comment or to show that the idea is acceptable. Finally, by observing users are gaining new insights through reading posts and comments that may probe their way of

thinking and lead to reconstruction of their mental models. The emphasis on the group is because the groups bring together people that have the same interests or line of profession. This makes it useful to the organizational knowledge as the individuals are striving to learn more about their field so that they become better at what they do.

5.1. General conclusions

The research performed for this thesis was devoted to investigating the role of the groups on social media as PKM tools. The existing problem is that the functionality of the groups on social media is not fully appreciated; many do not realize how this tool can be very useful for knowledge management. Although there is a significant amount of literature on Web 2.0, PKM and Knowledge management, not many of these concentrate on the benefits of individual features of the Web 2.0. With this consideration, this thesis was aimed to establish the impact of a particular tool which is the group feature.

The group feature is a community of practise that is formed on a social network. Its purpose is for the members to share their knowledge and experiences in order to develop each other's competencies. Through the interactions on the group, that is posting, commenting, reading other people's posts, individuals are involved in a process of personal knowledge management. They are involved in reconstructing their own mental models and therefore learning and creating new knowledge.

Knowledge management has become increasingly centred in creating conditions that support the interactions of individuals rather than extracting and storing knowledge (Kirchner *et al*., 2009). Knowledge creation and knowledge sharing are crucial activities in every knowledge management initiative. The group on a social network is such a platform. In addition to the interactions, the histories of conversations or older posts are stored in an archive folder so that user can always have access to the information. The group feature can be viewed as a total knowledge management package.

A lot of information exists in the mind of the individual. Individuals who possess knowledge that is essential for any organizational function are knowledge workers. Knowledge management is aimed at diffusing this knowledge amongst the workers in the organization to make the organization more competitive. It is therefore important for individuals to share their knowledge. When they participate on social networks, individuals enhance their knowledge, they create new knowledge. When individuals socialize and learn in the process they are involved in personal knowledge management.

This is what happens on the social network groups. Discussions are started where users share their experiences and insights, which invoke deeper thinking and analysis and create new understandings.

5.2. Summary of Chapters

In chapter one an introduction of this research was given. The purpose was described as an attempt to establish whether there is knowledge sharing on social network groups and whether the users are benefiting from the use of the group feature of the social network. These aims were influenced by other studies that have been done on knowledge management on social networks, organizational learning on social networks amongst other studies. Because the social network has various uses and various features I realized that the feature where the most learning would take place is on the group, which is a form of community of practice. Based on this contention, I decided to focus on determining how social network groups can be used for personal knowledge management.

In Chapter two, a literature review on knowledge management, personal knowledge management and knowledge sharing was conducted. This was in order to show the relationship among these elements. The common element amongst these elements is the person or individual or knowledge worker. The individual is at the centre of all knowledge management processes. Personal knowledge management is the basis of knowledge management as the focus of knowledge management is the knowledge worker. Knowledge sharing happens amongst individuals. The individual is also the distinct attribute of social networks. A social network group brings together individuals that share the same interest

PKM involves skills where individuals retrieve and organise the information. This is evident from the groups on the social networks where individuals are able to access information from their communities of practise. In order for the individuals to access that information, it has to be shared therefore knowledge is an important activity. PKM is enabled by individuals who share knowledge. Knowledge sharing models such as the SECI model, the knowledge markets and the concept of Ba were discussed. From these theories, patterns of knowledge sharing were identified.

Social media can be considered as a knowledge market where buyers, sellers and brokers of knowledge meet to perform knowledge transactions. Through the interactions on the group feature, individuals are able to collect, organize and coalesce the knowledge that

they have with that which they obtain from their social network. As knowledge workers, they potentially bring that knowledge to the organization and this improves the performance of the organization. The communication structure and the culture of social network groups promote a free flow of knowledge. Members participate on the same level and they have a shared vision of creating knowledge. Furthermore, some of the challenges that exist in organizational knowledge management can be addressed through the use of social network groups as knowledge sharing tools. Social networks are therefore important in the knowledge management process because they provide a platform for PKM and a framework for the individual knowledge worker to enrich themselves and others within their database.

In Chapter three, a review of various studies on social media was done. The main characteristics of social media were identified. Some of the existing literature on social networks was reviewed and the findings of these studies were discussed. The *group* feature was described and the three networks that were used as the focus of this study were described as well. While other Web 2.0 tools enable knowledge management, the group enables PKM because individuals choose the communities that they want to belong to. These communities have information relevant to their interests and therefore can easily be organized.

The most apt users of social media were identified to be Generation Y and Z. These have been have been identified in the analysis of the results of this empirical study done for this thesis as the largest number of users of social network groups. These individuals participate on the social network group by posting, reading comments and liking. By doing so, they offer feedback on the discussion matter. This also shows that there are various kinds of interaction on the platform. The importance of this community of practice is the collaboration that happens. As a result of such collaboration if an individual has a challenge they can be assisted by other user's comments or by searching previous discussions on the particular matter. Since the social network group is a community of practise, joining is voluntary as well as participation. This eliminates hierarchical structure and ensures a shared vision of members, that of sharing knowledge and creating knowledge in their fields. The fact that the social network platform is based on the World Wide Web ensures that it reaches various audiences and thus increasing the value of knowledge.

It is clear that most theories of knowledge sharing map very well with Web 2.0 technology. In particular, the group feature allows conversations and collaboration that creates knowledge. The random pieces of information that are found on the interactions on the social networks can be systematically integrated and applied to expand our personal knowledge. It can thus be concluded that social media can enable and significantly increase the use of distributed knowledge. This chapter was concluded by mapping social networks groups' characteristics to knowledge sharing.

Chapter four described the methodology used to collect data for this study and in chapter five, the results from the survey were analysed. The questionnaire was used to show the user patterns on social network groups. The amount and variation of activity on the groups show how crucial the social networks are for PKM and organizational knowledge management.

The results of the survey show that social media groups do not limit participation to an individual's usual context but rather, participation spans across different geographical area and thus empowering the knowledge worker in the organisation. Also those, the users are highly involved in various activities on the social media groups such as posting, reading posts and comments, commenting and also liking. In participating in such activities users are either learning new things or they are sharing the knowledge that they have. It shows that groups allow PKM through retrieval, organization, analysing and securing information through the users' participation. The use of social networks groups can alleviate some of the problems and challenges in to do with knowledge sharing within an organization.

5.2. Findings

Based on the analysis of the results from this study it can be concluded that social network groups are very instrumental in knowledge sharing. The activities that are available on the groups, the diversity of people, the mutual trust element, reciprocity and the non-existence of hierarchies make it a suitable space for individuals to share knowledge.

The aim of the study was to establish whether the group feature on social networks promotes knowledge sharing.

The study used theories from various scholars to map social network groups to know sharing. These included;

- Trust of members
- Reciprocity
- Community of Practise
- SECI model
- Knowledge markets

It was found that all these features are evident or are the main characteristics of the group feature on social networks.

The following research questions and sub-questions were posed at the beginning of this research:

- How do social-networks groups promote personal knowledge management?
- In which ways can knowledge sharing activities on social network groups contribute to organizational knowledge management? ;

The above questions can be further broken down into the following sub-questions:

- What determines their choice to become a member and what is the purpose or motive of becoming a member?
- How do the individuals participate on social network groups?
- How do users view the knowledge or information that is searched or shared?
- What are the factors that motivate knowledge sharing to the users?
- How do users incorporate the knowledge that they obtain in their workplace

Three hypotheses were derived from these research questions and were addressed in the empirical part of the study.

1. Social network groups' users are involved in personal knowledge management through sharing and create their knowledge and experiences voluntarily because of trust relationships

The individuals on the social network groups develop trust for each other as a result of the activities and also viewing the profiles of other group members. Group members are usually people that are experienced in the field or people who want to learn about the field. Participation on the group is voluntary; individuals post or comment only when they have something meaningful to share. Others are involved in personal knowledge

management by simply reading posts and comments from others thereby creating new perceptions and understandings. As Gordeyeva (2010:10) indicated, trust is crucial for knowledge sharing to take place. The professionals in a community are more likely to share the knowledge freely without fear of being judged as they consider themselves equals on the platform.

2. Social network users harvest knowledge and insights from experts worldwide from the groups that they belong to and apply this knowledge.

The survey showed that respondents belong to different parts of the world. One factor that was prevalent in the survey was that respondents choose the groups that they join based on their line of profession. It can be concluded that groups have professionals from different parts of the world. Another consideration that confirms this hypothesis is the level of education and work experience that the respondents of the survey possess. Furthermore, the profile of each user can be viewed by other group members. Specific to LinkedIn is a feature called "endorsement" that allows people to confirm or act as referrals to the qualifications of other users that they have come across in business. All of this evidence confirms that experts exist on social media and users benefit from these experts. Individuals are able to harness the intelligence of all these experts brought together (Lykourentzou *et al*., 2011:217).

3. Social network groups promote Personal Knowledge Management which in turn promotes Organizational Knowledge Management.

Some of the literature analysed state that personal knowledge management leads to organizational (Efimova, 2005:1; Jain 2011:1). This is because the individual is at the heart of the knowledge management processes. The individual is also the centre of interactions on social media. As discussed in this thesis the group feature is a tool for PKM; therefore it can be derived that social network groups in turn promotes organisational knowledge management.

5.3 Significance of the study

From the insight obtained in this thesis, it is clear that social network groups have a potential of playing a vital role in the economy. The findings of this study may encourage

organizations to promote membership and participation on social network groups to their employees. This may benefit the organization by growing the knowledge assets of the organization thereby increasing the competitive advantage of the organization. Furthermore, the global economy may also benefit from the knowledge creation that takes place as a result of diverse knowledge combination on the social networks.

5.4 Discussion of problems

Some problems were encountered in the process of compiling this thesis. One problem is that it does not measure the actual organizational impact of the knowledge gained from the group of the social network. The questions in the survey do not address the issue whether the organization benefits from the knowledge that the individuals bring since the survey was carried out on individuals and not the organization itself. "Just because an individual possesses knowledge, however, does not mean that he or she will necessarily share it with the group. The individual […] must be motivated to share it" (Argote, 1999: 105). The thesis bases its conclusion on the existing literature that social media has generally been accepted as a useful knowledge management tool and that the knowledge shared and gained gives an organization competitive advantage.

Another problem is that the research is highly limited to social networks that have a "Groups" feature. More specifically, the research focused on three social media platforms which are Facebook, LinkedIn and Google+. It excludes other social platforms which might or might not have the feature of creating a community of practise, while these platforms may still be potentially useful PKM tools.

Another limitation is the number of responses obtained which may not be truly representative as this was an attempt to determine patterns across various parts of the world. A larger number of respondents from different countries would have been more useful to actually make it deterministic. The most apparent barrier was the cost to carry out a larger scale research.

5.5 Suggestion for Further study

With the advancement in the knowledge era, it is important to encourage knowledge sharing .Social network groups offer an opportunity for knowledge sharing of individuals

within the same profession on a global platform yet minimizing costs. This is better than social platforms that have been developed within organizations as the social networks within the organization have limited expertise when compared to social network groups. Another limitation of intra-organizational social networks is the organizational structure where hierarchies exist and the organizational culture when other members are not willing to interact on the social network of the organization. This is not evident on the social network groups in this study as the individuals join freely and participate freely.

One possible research route would be to further investigate on the comparison between intra-organizational social networks and the public networks such as Facebook, LinkedIn and Google+ among others and the benefits.

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Appendix A

Social network groups' survey

The aim of this questionnaire is to establish whether social networks are useful for PKM and organizational knowledge management, and in particular the group features, for knowledge sharing. The group features are those features that are not by default open to public view and usually concern a particular topic, theme or interest. In other words, one has to become a member of the group or page in order to follow the updates and membership is sought on the basis of the topic, theme or interest.

Personal details

1. Age

- 21-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51+

2. Gender

- Female
- Male

3. Country

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4. What is you highest level of education?

- High School Graduate
- 3 year Diploma
- Higher Diploma or 3 year Degree
- 4 year Degree or Honours Degree
- Postgraduate Diploma or Masters
- Doctorate
- Other:----------

5. What position do you hold within your organization?

If currently unemployed, choose the last position held.

- Junior Employee
- Senior Employee
- Junior Manager or Supervisor
- Middle Manager
- Senior Manager

6. Select the number of years in your current position.

If currently unemployed, select the number of years in the last position held.

- <1 year
- 1-2 years
- 3-4 years
- 5 years +

7. Total number of years of industry experience?

- <1 year
- 1-3 years
- 4-6 years
- 7-9 years
- 10 years +

Social networks in general

8. Select all the networks that you are a member of.

- Facebook
- Google+
- LinkedIn
- Other:

9. How do you participate in your social network (in general)?

Consider the frequency of the following activities.

	Never	Rarely	Occasionally	Frequentl y	Very Frequently
I scan the newsfeed					
I read some updates					

I read comments					
I read comments and post new updates					
I only comment					

10. For what purpose do you use your account?

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a) I network for jobs					
b) I look for new information					
c) I look for solutions to problems					
d) I network to find experts					
e) I visit with a view to learn new things					

11. Select the group features that you participate in on these networks.

- Facebook Pages
- Facebook Groups
- Google+ Community
- LinkedIn Groups
- Other:

Social Networks Groups/Communities/ Pages

The following questions relates to your choice in the immediately preceding question. In other words, answer the following questions with regard to the group feature that you use primarily.

In the following questions the group feature that you use primarily, will be referred to as "your community". Reference will also be made to "your wall", although in your particularly chosen feature it might be called something different -- it refers to the main page of your profile, news feed and status updates limited to your friends and connections.

12. How many groups do you belong to on the various social networks?

- 1
- 2-5
- more than 5

- more than 10

13. In general what determines your choice to join a specific group?

- It is in line with my profession
- It is a field that i would like to explore
- It was recommended by the social network
- It was recommended by a friend
- Other:

14. How do you use the groups on Social networks?

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
I have used the information from the group as a solution to a problem					
I wish to share my knowledge with the group					
I share knowledge in the group, because I trust the members					
I prefer to use knowledge coming from people with high group reputation					
I am motivated to share knowledge by the fact that my own questions may be answered by others in the future					
Information shared is valuable because of the vastness of the collective experience of the group					
My use of the groups feature is directly work-related					
My use of the groups feature is indirectly work-related.					
My use of the groups feature is primarily social.					
Work-related insights are sometimes the					

unintended result of my social use of the groups feature					

15. Please state your view on social network groups

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Social networks communication within a group is preferable to direct communication					
2. It is easy to use the group feature on social networks					
3. Users turn to their groups for information to solve problems.					
4. The group feature makes sharing knowledge easy					
5. The group feature gives access to a large diversity of people.					
6. The group feature gives me access to relevant knowledge for my work					
7. Problems and solutions posted on the group increases knowledge					

16. How often do you get what you are looking for?

	Never	Rarely	Occasionally	Frequently	Very frequently
1. I find solutions for problems					
2. I find suitable job advertisements					
3. I am able to identify experts					
4. It stimulates collaboration between me and others					
5. I make new business contacts					
6. I make new friends					

17. Please evaluate the following statements as they pertain to the community and your wall.

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
• When I need certain information I look for it by posting the question on my community in contrast to my wall.					
• I obtain new knowledge on the community to a larger extent than on my wall.					
• I take more care to provide accurate information on the community as opposed to my wall.					
• I trust the content shared on the community more than the content shared on my wall.					
• By participating on the community I can interact and benefit from individuals across the globe as compared to the limitation on my wall					

Appendix B- Tables

- **Select all the networks that you are a member of.**

Table i.

GROUP OF NETWORKS	Freq	Allocation	Facebook Score (Freq x 2)	Google+ Community Score (Freq x 2)	Linkedln Score (Freq x 2)	Twitter Score (Freqx2)
Facebook, Google+, Linkedln	20	2	40	40	40	0
Facebook, Linkedln	28	2	56	0	56	0
Facebook, Google+	9	2	18	18	0	0
Facebook, Google+,LinkedIn,Twitter	5	2	10	10	10	10
Facebook, Google+, Twitter	1	2	2	2	0	2

Facebook, LinkedIn, Twitter	4	2	8	0	8	8
Facebook,Linkedln, Printerest	3	2	6	0	6	0
Facebook, Whatsapp	3	2	6	0	0	0
Facebook, Firestring	2	2	4	0	0	0
Google+, Linkedln	2	2	0	4	4	0
Facebook, Skype, twitter	1	2	2	0	0	2
Facebook, Google+,LinkedIn,Yammer, Chow, Mexconnect	1	2	2	2	2	0
Facebook	1	2	2	0	0	0
Google+	1	2	0	2	0	0

Linkedln	1	2	0	0	2	0
Whatsapp	1	2	0	0	0	0
	83		*156* *Scores*	*78* *Scores*	*128* *Scores*	*22* *Scores*

Table ii. Participation on social networks

How do you participate on the social network?(in general)

Consider the frequency of the following activities

	Never	Rarely	Occasionally	Frequently	Very Frequently	Total
I scan the newsfeed	5 (5.3%)	1 (1.3 %)	23 (30.3%)	33 (43.4%)	15 (19.7%)	76 (100)
I read some updates	0 (0)	3 (3.9%)	25 (32.9%)	36 (47.4%)	12 (15.8%)	76 (100)
I read comments	0 (0)	3 (4.1%)	26 (35.6%)	33 (45.2%)	11 (15.1%)	73 (100)
I read comments and post new updates	3 (3.9%)	14 (18.4%)	19 (25.0%)	34 (44.6%)	6 (7.9%)	76 (99.8)
I only comment	5 (6.6%)	24 (31.6%)	29 (38.2%)	17 (22.4%)	1 (1.3%)	76 (100.1)

Table iii. Purpose of social network account.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
I network for jobs	11 (14.3%)	9 (11.7%)	24 (31.2%)	27 (35.1%)	6 (7.8%)	77 (100.1)
I look for new information	3 (3.9%)	4 (5.2%)	11 (14.3%)	34 (44.2%)	25 (32.5%)	77 (100.1)
I look for solutions to problems	3 (3.9%)	6 (7.8%)	22 (28.6%	25 (32.5%)	21 (27.3%	77 (100.1)

			)		)	
I network to find experts	2 (2.6%)	12 (15.6%)	18 (23.4%)	31 (40.3%)	14 (18.2%)	77 (100.1)
I visit with a view to learn new things	3 (4.1%)	3 (4.1%)	16 (21.6%)	29 (39.2%)	23 (31.1%)	74 (100.1)

Table iv. Membership in groups

NO OF NETWORKS	No OF MEMBERS (FREQ)	RELATIVE FREQ (%)
1	4	4.8
2	44	53.0
3	29	35.0
More than 3	6	7.2
TOTAL	83	100