Organisational Knowledge Sharing Using Social Networking Sites: Risks, Benefits and Barriers

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Abstract. Augmented globalisation and the increased speed of operations in the business world have led to dramatic changes in organisational life; the traditional way of work is no longer competitive. It is assumed that an organisation that knows how to communicate and share knowledge quickly will always have an extra competitive advantage in comparison to others who do not participate in knowledge collaboration. Social Networking Sites (SNS) have created a new method of knowledge exchange and introduced new abilities for an organisation to share knowledge. This research investigates the role of SNS in organisational knowledge sharing through a review of concepts and theories from different disciplines. We explore and investigate how SNS are used to facilitate storage, access and knowledge sharing in organisational contexts. The research will conclude with the discussion on the risks, benefits and barriers to implementing SNS for knowledge sharing.

Keywords: Organisational knowledge sharing · Social networking sites · Knowledge exchange · Knowledge storage and access · Knowledge sharing tools

1 Introduction

"If only we knew what we know" is a refrain that has echoed across centuries, cultures, organisations and day-to-day affairs. The problem could be to do with the creation of knowledge, its acquisition and codification; the communication of knowledge; timeliness in the sharing of knowledge; the usage of appropriate knowledge in an appropriate context or the lack of process and systems to support knowledge sharing. In the current competitive business environment, organisations need to be adaptive in the face of change and uncertain events. The way forward to adaptability involves communication and the sharing of knowledge. According to Davenport and Prusak [7], in a rapidly globalised world the firm can survive only by improved communication. Knowledge sharing (KS) helps organisations quickly respond to changing market conditions by collaboration between organisational units, its partners, suppliers, and outsiders in the organisational sphere [20]. When an organisation has a 'sense' of what is going on in the network, with competitors or outside the organisational environment, they can sense future events and analyse them by their enriched knowledge base.

P. Cong Vinh et al. (Eds.): ICCASA 2016, LNICST 193, pp. 22–31, 2017.
DOI: 10.1007/978-3-319-56357-2_3

1.1 Practical Problems

Despite accelerated technological improvements, some organisations are still not willing to share their own practices, but even if they are willing to participate in knowledge-sharing activities, they do not know, when or where, nor how to make it efficient and safe. The correct use of shared knowledge is also a question for the researchers: How to share your knowledge in a safe environment? How can we ensure that the knowledge we receive from the sender is high quality knowledge? What systems and innovations are available to support such knowledge sharing in organisations? These problems become even more magnified when we consider SNS as mechanisms, tools, and technologies for the creation, storage, refinement, and dissemination of knowledge.

1.2 Research Objectives and Process

Our research was motivated by the practical problem that most organisations share knowledge in an inadequate manner. We first identified practical problems that beset organisations that could be overcome through knowledge sharing. Then, practical problems motivated us to propose research questions which in turn help us to identify research problems and a research process to overcome it. In this paper we will investigate the new emergent technologies, such as SNS which are currently in use for social and business purposes, as well as explore the role of SNS and their application in organisational knowledge sharing.

To investigate the knowledge-sharing process in an organisational environment, we will study technological features, which can be used in the context of knowledge sharing within organisational walls as well as for external business use. We will review how SNS are used to facilitate storage and access to knowledge in organisations, empowering knowledge workers to achieve a sustainable level of knowledge sharing. We will also discuss the issues and requirements of SNS as one of the perspectives of successful KS.

Sect. 2 provides recommendations on the technological aspects which organisations need to be aware of for knowledge management and sharing. Then we will introduce the concept of social networking sites and its functionalities for knowledge-sharing which are currently being recognised as essential to any business (Sect. 3). We will also discuss the potential risks and benefits of using SNS for organisational knowledge sharing, as well as possible barriers that organisations face for implementing SNS for knowledge sharing. We will conclude this paper with the summary of the undertaken research and potential contributions of the performed work for researchers and practitioners (Sect. 4).

2 Systems to Support Knowledge Sharing

With the emergent interest in organisational knowledge-sharing, research on information systems has started to introduce the concept of a particular class of information systems, defined as Knowledge Management Systems (KMS). The objective of KMS is to support the creation, transfer and sharing of knowledge in an organisation by the assistance of emergent systems and technologies. In this paper we present a review on

the potential role of information systems which support knowledge sharing. Davenport and Prusak [8] mentioned that computers have created a new method of knowledge exchange and introduced new abilities for an organisation to use existing knowledge, stored in the minds of knowledge workers. Individual knowledge can be transferred to an electronic format and used by other individuals. The computer itself has little to do with knowledge work; its purpose is to store, retrieve, reuse and share knowledge.

Information systems in knowledge sharing research have opened a significant subject for discussion. Based on [19], Information and Communication Technologies (ICT) are the tools that offer different opportunities in the domain of knowledge sharing. For example, electronic communication offers fast collaboration across geographical and time boundaries. Alavi and Leidner [1] state that with the help of online directories in knowledge management, the search for relevant and recorded knowledge is more efficient; also, real time access to transactional and customer data give an opportunity for an organisation to stay on the edge of the current market and have high performance efficiency. That is why interest in IT is raised not only in the research area, but in the business environment as well. Organisations invest significant amounts of time and money in knowledge sharing systems, for the purpose of staying competitive. According to [6], many knowledge management initiatives rely on IT as an important enabler. Knowledge Management Systems (KMS) was developed for the support of knowledge management processes namely knowledge creation, storage, retrieval, transfer and sharing. Alavi and Leidner [1] identified three common applications used in knowledge sharing practices: first, coding, storing and sharing best practices; second, the creation of corporate knowledge directories for storage; and third, the creation of knowledge networks for sharing.

Coding, storing and sharing best practices – the principle of this application is to make available internal knowledge for knowledge worker use. Corporate knowledge directories - mapping of internal expertise, in one sense is based on a similar technological platform and performs similar actions. Internal expertise codified and mapped. It is of use to have real time information on demand and the search time decreased through knowledge being classified by its importance and subject. Knowledge networks are a system application which removes boundaries between time, destination and knowledge worker title. Knowledge workers or communities of practice can communicate in real time across geographical and time boundaries. Communication can be performed face-to-face, by text and/or video application. These types of 'no boundaries' communication facilitates opportunities for organisations to build and share collective knowledge.

Tiwana [18] identified two primary activities of KMS which are storage and communication. From the literature review, it has been identified that knowledge itself has no value for an organisation if it is not used in an appropriate manner [16]. To enable the process of knowledge accumulation, organisations seek to implement specifically designed IS to fulfil knowledge management needs. Benbya et al. [3] identified the following four categories of KMS: Content management tools provide applications for classifying, codifying and integrating knowledge from different sources. Knowledge-sharing tools are system applications tools which make more approachable the process of knowledge-sharing between organisations, organisation partners and knowledge workers. Knowledge search and retrieve

systems provide search engines. General KMS are a variety of systems that provide assistance for decision making. KMS offer support in managing knowledge with a technology perspective. Table 1 summarises the implications for KMS. Each KMS tool or type is built in association with these five parameters.

Table 1. General requirement for Knowledge Management Systems

Engagement	Engage in knowledge sharing activities, support development of individual and organisational competencies
Access	Access to knowledge to provide effective search for relevant information
Safety	Safe use of information and knowledge to insure quality and privacy
Process	Link among sources of knowledge to create wider breadth and depth of knowledge flows
Object	Gathering, storing and transferring knowledge

There are specific categories of KMS that have been established as separate standalone applications, tools and systems that can be grouped under GDSS, CSCW, EMS and SNS. These systems are separate streams of KMS that have been rigorously studied and utilized across various industries and enterprises.

GDSS are group decision-support systems, combining communication, computing and decision-making technologies for improving work performance between the groups [10]. GDSS is a class of Electronic Meeting Systems (EMS). GDSS are used in knowledge management for supporting meetings and group work. The GDSS include "electronic messaging, local- and wide-area networks, teleconferencing, and storage and forwarding facilities. Computer technologies include multi-user operating systems, fourth generation languages, data bases, data analysis facilities, data storage and modification capabilities" [11, p. 590]. The GDSS is useful for knowledge creation and transfer process, as it eliminates barriers of communication, enables parallel communication, offering an effective way to collect and evaluate information. The limitation of GDSS in knowledge can be seen from several contextual factors; for example, user participation in group networks can be affected by the organisational management style and cultural environment.

Another type OF KMS is Computer Supported Cooperative Work (CSCW), CSCW is not a system application, but a design-orientated concept. The focus of CSCW is on contextual factors of cooperative work. Schmidt and Bannon [17] explain three factors on which CSCW concentrates. First is awareness of individuals where knowledge workers are aware of the fact of cooperative work and where knowledge-sharing activities can take place. Second, articulation work is where the work must somehow be divided between individuals who assemble in organisational units. Last is appropriation, which means an individual acceptance of technology, how the individual or groups adapts technology, or how the design of technologies is appropriate for the user. The success of CSCW systems depends on the design concept, where the current managerial practices are revised, and the social context of cooperative work between knowledge

workers is then investigated. In addition, aspects like individual adaption to technology are also included in a design of CSCW.

EMS - Electronic meeting systems is another version of GDSS, also having the function of supporting group meetings. However, the difference between GDSS and EMS, is that it not only supports the decision-making process, but also focuses on communication. The GDSS is more old-fashioned and is not an efficient application for collaborative work between groups. EMS oversteps the GDSS boundaries of time and geography, by using technology like network computers and projected screens. Groups do not need to be in the same room at the same time to perform a collaborative communication. EMS is a combination of GDSS and CSCW. The EMS difference is in providing more than just decision making: it provides communication in real time, making idea generation, planning and problem structuring more possible. The distinctions between GDSS and CSCW combine into a single technology application to support electronic meetings.

The EMS plays an essential role in knowledge management as well as GDSS and CSCW. These three terms in knowledge-management systems were the first emergent applications in the workplace which took the knowledge management process to a different level. The important fact to note, however, is that these three applications are affected by the technological environment, organisational environment and context and user involvement. In addition, just the use of the application will not lead group members to make a better quality decision; it might support its process and save time and money, but it cannot replace human decision making. The last category can be named as a more integrated and innovative application for knowledge management. It integrates the difference in time and location by using modern applications like social networking systems.

3 Knowledge Sharing Using Social Networking Sites

In this section we explore how social networking sites (SNS) as a web technology are used to facilitate storage and access to knowledge in organisations, empowering knowledge workers to achieve a sustainable level of knowledge sharing. This will also discuss the issues and requirements of SNS as one of the perspectives of KS.

Experts say that social networking allows an organisation to open boundaries of communication and discover new knowledge inside an existing structure, or even reused knowledge, by capturing knowledge in the organisation with enterprise tools. In recent research on knowledge management it is often mentioned that a strategy brings virtual communities of practice, enabled by online interactive technologies, into an organisational environment. The latest news from the ICT field suggests that virtual communities of practice are becoming a knowledge management tool of choice for any multinational corporation, where knowledge sharing is an essential role as well as adding a competitive advantage to the business. Enterprise social networking is becoming a popular topic in research. Boyd and Ellison [4] define social networking sites (SNS) as Web-based services that provide the ability for stakeholders to (1) build a public or semi-public profile, (2) share the connection with other users within a bounded system, and

(3) view and communicate with the list of connected users within a system. The nature of communication and connection can vary from site to site (p. 211).

Despite the recent fame of virtual communities of practice in organisations around the world, not much is discovered regarding the aspects of success or failures. As well as their effect on knowledge sharing, we hear only that social networking is a tool for sharing knowledge, but how it works, no one can explain. One of the factors which influence employees to use the virtual communities in an organisational environment is its ability to share knowledge, despite hierarchy structure, age, experience and geographical barriers. We also have to keep in mind that to achieve successful use of an enterprise social networking tool, the workforce needs to participate in these activities, which will include several consequences: loss of time by employees in the workplace as well as inadequate use of this shared knowledge.

3.1 Knowledge Sharing in Social Networking Sites (SNS)

The label of "social networking" systems are based on the technologies that are used as an extension for the social activities in the Web sphere. SNS is more about already established relationships in the offline social world that are taken further to online communications develop new connections [5].

SNS offers a set of tools and applications and these can be grouped based on the organisational business needs and purposes. Hinchcliffe [12] created the FLATENESSES, it is an extended version of SLATES (search, links, authoring, tags, extensions and signals) a mnemonic developed by [14, 15]. Hinchcliffe [12] argues that the SLATES acronym omits some necessary social, freeform, network-orientated and emergent aspects of SNS in a business context. First we define SLATES, is the acronym created by [14] and then the extended version FLATNESSES. SEARCH: the knowledge worker must be able to find required information by use of keywords and page navigators. Search function is one of the essentials of KMS. Search allows employees to reuse already developed best practice, make quick and better quality decisions, save time and resources. LINKS: are key indicators "those search engines use to assess the importance of content" [14, p. 34]. AUTHORITY: a knowledge worker has an opportunity to author information, experience, comment. TAGGING: an easy and useful application that allows the knowledge worker to categorise information, resulting in better search outcomes and facilitating better information and knowledge-sharing within groups. EXTENSIONS: follows an approach similar to tagging, but also combined with authoring and links, helpful in identifying a pattern of used knowledge in an organisation. SIGNALS: are used by a knowledge worker to identify when new information of interest is available in an enterprise. One of the examples of signals application is RSS where the knowledge worker can subscribe to any organisation information, updates and project activities. Hinchcliffe [12] adds four components to the original acronym of SLATES. FREFORM is a simple upfront structure that combines a variety of tools. The enterprise might start with the use of easy freeform tools like blogs and wikis. EMERGENCE architecture is where the organisations required more complicated and task orientated tools, which are most significant in terms of productivity and timeliness. SOCIAL - Enterprise 2.0 and Web 2.0, 3.0, and 4.0 are not only system applications,

but also enables people to come together and collaborate. For example, wikis provide this possibility in a virtual format, where the individuals search, publish and share information and their knowledge with their networks. NETWORK-ORIENTATED concentrates on the content of an application, where it is fully web-orientated, addressable and reusable.

To conclude, most of the above tools, technologies, and applications have been designed for the purpose of engaging individuals, groups, communities of practice, and/or knowledge workers in knowledge accumulation activities, where knowledge can be easily transferred, stored, retrieved and shared.

3.2 Risks and Benefits of Knowledge Sharing Using SNS

Why are many organisations still not getting competitive advantage from SNS; why does implementation of SNS still fail? To understand the existence and performance of SNS in an organisation, we need to explore the potential benefits and risks factors which motivate and frighten organisations in implementing SNS and knowledge workers in using it. Dawson [9] provides a list of potential risks and benefits of implementing new emerging technologies for organizational KS (refer to Fig. 1).

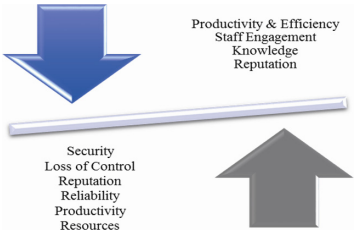

Fig. 1. Risks and benefits of using SNS for knowledge sharing

The first potential benefits which an organisation sees in SNS are productivity, efficiency and competitive advantage. Efficiency and productivity can be seen from the aspects of engagement and participation in knowledge-sharing communities. Faster access to knowledge and information resources allow employees to work more effectively, and personal efficiency can also rise, due to the reduction of unnecessary information and automatic email filters, to prevent excessive emails from disturbing employee productivity. Another important aspect regarding SNS is staff engagement by improved communication across an organisation. Geographical barriers are not a problem, as employees can collaborate with their co–workers any time by using SNS tools. Organisations who deploy SNS could also improve the learning process inside the enterprise, by easier access to content and learning resources. SNS can be used for commercial benefits, by bringing its performance, products, services, success stories and many other activities to the surface through Web 2.0, 3.0, and 4.0 technologies. It might increase the visibility of the organisation in its market by increasing brand awareness. Also by efficient use of SNS, an organisation might increase its customer satisfaction and service, allowing customers to be connected with experts and share their

ideas. The SNS by itself does not require heavy investment or any training for the employees to start using it. Overall it can be called a cost effective technology solution [5].

Transparency of organisation by use of SNS can also bring its drawbacks, like loss of reputation or loss of control over employees and activities. Security, reputation, loss of control and privacy issues are four main risks facing an organisation when employing SNS. First of all, the security issue rise from the moment the organisation steps into network activities, it can suffer information loss, "confidential and competitive information can be leaked externally" [9]. Internal and external communication can affect the organisation's environment and its stability; employees might disturb it by inappropriate behaviour. SNS also brings the privacy issues to the surface; employees comments, activities, participation could be checked, watched, and controlled. This might lead to different organisational issues and disagreements between managers and employees. Transparency brings other essential risks. In the case of competitive advantage, the competitors, through the use of SNS tools, will be able to see what the organisations do and weaknesses that might provide an opportunity to build a competitive strategy. Even though SNS vendors promise a higher level of collaboration, the productivity loss can appear to be really expensive, by the use of internal and external social networking tools which might not always reflect the business outcomes; employees can waste their time and resources.

Overall, the dominant part of the reviewed literature emphasises the benefits of SNS, its usefulness in knowledge sharing, competitive advantage in market and collaboration inside and outside the organisational sphere. As we can see from our discussion, SNS have their own risks which might also offset their benefits. Risks and benefits are unique for every organisation. Therefore the organisation must offset the above, based on their business field, performance, environment and employees, before it goes ahead with the implementation process.

3.3 Barriers to Knowledge Sharing Using SNS

If SNS are to be used in organisations for knowledge management and knowledge-sharing, the enterprise will face changes in process, culture, environment and knowledge workers [13]. Changes are always difficult for an organisation. The organisation has to match SNS with its culture, environment, structure, communication climate, knowledge worker experience, age and interest [4, 9, 13]. For successful implementation and use of SNS, organisations are also required to build an open-minded and non-hierarchical environment for information and knowledge exchange [13]. Dawson [9] in his book "Implementing Enterprise 2.0" identified four common areas where the SNS might face complications in an implementation process (refer to Table 2). These are culture, executive attitudes, vested interest and design of initiative. In a similar pattern [2] describes culture, leadership, trust and supporting tools and technology as the common enablers of knowledge-sharing by SNS use in a workforce. Judging the similarity of the provided aspects, we assume that by stimulating a number of enablers we automatically remove the barriers. Leadership style or executive attitudes are also enablers that affect SNS implementation and the knowledge-sharing process. The more support the knowledge

worker receives from their management, the less adaptation time will be needed for an organisation to utilise SNS benefits.

Table 2. Key barriers for knowledge sharing using SNS

Culture	Executive attitudes	Vested interests	Design of initiatives
• Strongly hierarchical • Risk averse • Lack of trust in employees • History of failure • Embedded habits	• Poor understanding of benefits and risks • Fear of loss control • Power of legal and risk functions	• Impact on existing investments • Impact on IT function • Loss of power	• Complex language • Technology focus rather than business • No solid business case • Complex initiatives

Vested interest and design of initiatives are mainly technological barriers, easy to change, but sometimes expensive. The main issues which can arise during the implementation process are that SNS might not collaborate well with already-existing IT investment and design and language might not generate positive responses from the knowledge worker. Another barrier is the motivational factor of employee participation in the knowledge-sharing networks, as well as their motivation to share their knowledge through SNS. The workforce is full of individuals, whose preferences may vary, which is why it is difficult to predict the individual factor affecting the implementation.

4 Conclusion

SNS are becoming an important pillar for actualising strategies and gaining competitive advantage through the sharing of knowledge. The social networking phenomenon has invaded not only our personal lives but also our organisational day-to-day work routine. SNS facilitate the interactions and conversations between people, resulting in the creation of virtual knowledge networks. Organisations need to accept that social software is a reality in today's always-on (24 × 7), on-demand, interactive, business and technological landscape. This leads to the physical and conceptual boundaries between the work world and personal world crumbling.

This research study has identified several problems regarding knowledge sharing process and systems in use. First, the technology advantage is not always a solution and second, the human factor will always triumph and must be examined more precisely for identifying its effects on knowledge sharing. Thus to build a strong communication flow, where knowledge can be shared easily, an organisation needs first to overcome the problem of understanding the participants, the context, environment and elements which contribute to knowledge-sharing practice.

This study was able to provide insights into the state of knowledge-sharing components and their importance to a process. We raised the issue of context and socioeconomic environment as well as motivation for the individuals who are the primary driver for knowledge sharing. Growing globalisation and rapidly changing environment, where multinational firms rely on knowledge workers with different cultural backgrounds,

make us wonder how the individual context affects knowledge sharing and what could influence motivational factors for participation.

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