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# Implications Knowledge Sharing through E-Collaboration and Communication Tools

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*Successful knowledge management in institutions relies heavily on the process of knowledge sharing. Subsequently, the electronic tools of communication are no longer treated as repository within knowledge management but are regarded as collaborative tools in today's knowledge-driven organization. To further strengthen the positive effects of knowledge sharing through e-communication tools, institutions need to identify and enhance those tools that are being successfully acknowledged and implemented by the users. Basically, they must invest on the tools, which are used more comfortably by the users in order to develop the knowledge sharing procedures comprehensively. The goal here is to discuss current research and investigate the most efficient available tools for online knowledge sharing in institutes of higher learning from the lecturers' viewpoint. This study helps to identify the most proper systems for this purpose and to improve them for achieving better outcomes in academic environments. A survey was conducted to acquire data for this study. The questionnaire was designed and distributed through email to more than 700 Lecturers in a Malaysian university, out of which 150 complete responses were collected.*

**Keywords:** Knowledge sharing, e-collaboration and communication tools

## Introduction

To maintain dominant advantage over competition in today's highly competitive discipline, all available knowledge must be utilized reasonably and practically. Knowledge is the foundation of an academic member's competitive advantage and, ultimately, the primary driver of its value (Luo, 2009).

There are various forms of knowledge management that knowledge sharing has been identified as a major focus area for knowledge management because knowledge sharing provides a link between the level of individual knowledge workers, where knowledge resides, and the level of the institution, where knowledge attains its value for the institution (Ford, 2004; Lindsey, 2003).

One of the problems of local knowledge is the non-availability of mechanisms to access distant knowledge. Knowledge sharing across space and time raises serious problems due to the "localness of knowledge" (Davenport & Prusak, 1998). Sarker asserts that one of the key prerequisites for enabling collaboration and communication among members with diverse backgrounds in terms of domain and levels of expertise is the member's ability to create a sense of mutuality and a shared frame of reference. Clearly this would necessitate a sharing of knowledge from one member to another (Sarker, 2002).

With the development of new technologies, and particularly e-collaboration and communication technology, groups have evolved to encompass new forms of interaction and collaboration. The World Wide Web enables teams to share knowledge and work remotely on a project. E-collaboration tools such as videoconferencing, group support systems (GSSs), distance education tools (e.g., Blackboard, WebCT), and, more commonly, email have

evolved exponentially. These electronic modes of communication support mainly decentralized networks of communication. The new metrics of time and distance modify human interactions and, indeed, turn the classic network of face-to-face relationships into a network of virtual relationships. The modification of the nature of human interactions is the immediate correlate of a faster spread of information and sharing knowledge supported by ICTs (Routkowski, Vogel, Genuchten, Bemelmans & Favier, 2002). Electronic collaboration and communication is the purposeful use of networking and collaboration technologies to support teams in the creation of shared understanding toward joint effect. This concept has been developed through many years of research in how people use various collaborative tools in the purpose of sharing knowledge to achieve their tasks and goals (Fjermestad & Hiltz, 2000).

### **Knowledge Management**

Definition of Knowledge Management (KM) can be explained as, but yet is not bound to, the potent skills and capabilities of every organization to inspect, collect, administer and spread the knowledge of individuals and groups within its department. KM makes sure that the methods implemented to deal with this knowledge is and will consequently improve the overall performance (Ramanujan & Kesh, 2004).

Efficient knowledge management is made up providing accurate information to the right people exactly when they require. Knowledge Management (KM) focuses and supports “not only the know-how of a company, but also the know-where, know-who, know-what, know-when and know-why” (Ramanujan & Kesh, 2004). Knowledge is defined into two categories, namely, explicit and tacit knowledge.

By means of software, hardware and systematic processes, knowledge is acquired and coded from converting implicit experiences and proficiencies to explicit know-how's. Nonetheless, Ramanujan and Kesh 2004, argue that the only method of capturing tacit knowledge is through efficient communicative interaction and sharing. However, according to Lim and Klobas (2000), evolution of modern technology has increasingly elevated the interest and called significant attention toward KM in the world.

### **The Benefit of Online Knowledge Sharing**

It is reasonable to doubt that knowledge can be managed in traditional ways; the tension between knowledge and management is especially serious when it comes to tacit knowledge and the indispensable conditions for sharing tacit knowledge such as informal communities (Li, 2008). However, the sharing of tacit knowledge is especially valuable for collaboration and knowledge creation (Leonard & Sensiper, 1998). Therefore, the more management, the less knowledge to manage, and the more knowledge matters, the less space there is for management to make a difference (Alvesson & Karreman, 2001).

Many researchers have their definitions from their own point of view: Knowledge sharing is an activity which knowledge from one person, team or institution transfer or spread to another team, group or institution (Lee, 2001), Knowledge sharing is the process that managed through various modes of communication and collaboration which distribute knowledge to members in the right time, place and form (D'Aspremont, Bhaffacharya & Grard-Varet, 1998). Now, Knowledge-sharing system is taking on new features such as open, interaction, diversity and creativity (O'Reilly, 2005), Open: because of an open growing atmosphere of knowledge sharing provided by new systems. Interaction: with the appearance of user-centric concept, more and more people participate and interact in the exchange and share of knowledge. Diversity: users can share knowledge in many forms, including recommendation, subscription, evaluation, tag index and so on. Creativity: with the deepening of the relationship between the users and growing the range of exchanges in the system, the

tacit knowledge can be explicated to the greatest scope, which will make it possible for knowledge innovation and creation of new knowledge (Zhang, Liu & Xiao, 2008).

Knowledge sharing and communication among institution members, along with structural and cultural factors, have been emphasized for KM success in communication systems and KM literature (Bock *et al.*, 2005; Ko, Kirsch & King, 2005; Wasko & Faraj, 2005). Today's KM environments consist of members located in different part of the world that communicate via collaboration technologies to share knowledge for completion a project. Much of the studies in this domain have been concentrated on the technological aspects of such environments (Hwang & Kim, 2007).

The significance of knowledge sharing, especially for collaborative and joint ventures has been recognized thus far through previous studies (e.g. Hendriks, 1999; Goodman & Darr, 1998). Many researchers have noted the benefits of knowledge sharing and the negative consequences of knowledge hoarding. Effective knowledge sharing has been shown to lead to an institution's ability to retain the knowledge created by its members as well as their talent and expertise (Teruya, 2003). Knowledge sharing can increase efficiency and save on work hours by ensuring that an institution learns from past experience and avoid duplication of effort (Weiss, 1999). Knowledge sharing in universities between lecturers avoid that some lecturers in different departments perform the same investigation, which their other colleagues in other departments or universities may benefit from. For example, one lecturer is going to apply for some funding by preparing a detailed proposal. Other lecturers, who are willing to apply for the same funding, may need his experience and findings in the preparation of their proposals and could actually benefit from the information he already has. This phenomenon can save a lot of time and energy if appropriate methods of sharing knowledge being implemented; thus resulting in exploitation of the knowledge, which is commonly needed by multiple entities.

Several advantages are incorporated into using e-collaboration technologies both in government organizations and private institutions. Saul and Zulu (1994) cautiously mention electronic collaboration technology tools as a means to an end instead of an end in itself. The e-collaboration technology tools and systems are useful in assisting government and private entities in bringing solutions to the problems and thus can be justified according to the advantages and benefits that they result in and not only just for the sake of it.

Cost reduction as well as the better service quality is among the most obvious reasons that follow up the implementation of e-collaboration systems, benefitting the incorporation using them. The institutional capacity will be effectively improved, not to mention the enhanced decision-making processes and boosted inner efficiency. Another rather important parameter, which will be effectively improved, is the transparency within the institution that will eventually benefit overall performance. Upon the implementation of these tools, taking advantage of advanced technologies, access to information will become much easier throughout the facility. Ushering toward the real time processing of data. The cheaper and more efficient access to the larger amount of information with larger and more advanced computers is good enough reasons to add to the number of pro technology followers (Gichoya, 2005).

### **E-Collaboration Systems for Knowledge Sharing**

According to Davenport and Prusak, one of the problems of local knowledge is the non-availability of mechanisms to access distant knowledge. Knowledge transfer across space and time raises serious problems due to the "localness of knowledge" (Davenport & Prusak, 1998).

The main weakness of traditional association is that it is predominately dependent on infrequent face-to-face communication and thus is not encouraging to stimulating incorporation, especially when parties are located in different part of the world (Cheng, Love, Standing & Gharavi, 2006). Other than making use of traditional collaboration, an association should place emphasis on electronic collaboration (e-collaboration), which is referred to as collaboration through internet and online systems among a group of associated parties, particularly the use of communication and collaboration technologies to initiate and assist the sharing of resources especially across the world in order to improve associates' success (Gharavi, Love & Cheng, 2004; Lee-Kelley, Crossman & Cannings, 2004; Rutkowski *et al.*, 2002). From a technical viewpoint, it can require the use of web-based technologies and group decision support systems to electronically link associated parties (including supply chain) to exchange information and knowledge to achieve a desired outcome (Fliedner, 2003).

An online collaborative association can be expected to facilitate the acquisition of knowledge from associated parties and initiate the sharing of resources, strengthening the procedure of an informal association. The mutual resources can be intangible such as knowledge, information, ideas, and know-how. Electronic collaboration technologies can put forth this shared perception to work in an e-environment, speeding up and systemizing the reciprocated process. Yet, the institution that possesses the idea or knowledge (the source firm) may not like to share with others when it perceives this as a threat or unresolved risk. In many cases, institutions prefer to maintain solid boundaries toward others. This is what Williamson (1985) referred to as arms-length associations, which under extreme circumstances can become adversarial and result in repelling each other further away (Cheng *et al.*, 2006).

Virtual communication is the fundamental application of networking technologies to supply the academia with innovative and resourceful formation and dissemination of knowledge toward collaborative practices. Higher educational institutions would require employing techniques to capture and capitalize the divergent and personalized intellectual properties, which are distributed across the world. This being said, these are the electronic communication and collaboration tools that have made harnessing intelligence and knowledge through time and space quite possible (Qureshi & Keen, 2005).

There are many studies that each one focused on a specific e-collaboration and communication tools such as; Dennis, Hayes and Daniels (1999), focused their analysis on e-collaboration systems normally called group decision support systems, which usually are employed to support groups meeting in the same room and at the same time for knowledge sharing. Those systems were found to reduce meeting time, especially in meetings involving knowledge sharing such as, brainstorming and decision-making tasks. Also Kock in 2005, focused on asynchronous e-collaboration and communication tools, which support group work where members share knowledge at different times and from different places.

Choice of electronic communication and collaboration tools thus, depends on the amount of information required, the time requirement for information (how fast it is required), effectiveness of communication required and the efficiency of communication required (Bajwa *et al.*, 2003). Lecturers with remote physical distance from each other, have employed a range of communication tools (e.g. Groupware applications comprising chat, discussion list and application sharing capabilities, e-mail) that support the sharing of knowledge across remote sites, evidence from recent research suggests that the challenges involved in sharing knowledge across globally distributed university academics are still widespread, and that breakdowns in sharing knowledge do occur. Indeed, technical solutions are important, but are not sufficient (Kotlarsky & Oshri, 2005).

### Systems and Influenced factors for Knowledge Sharing

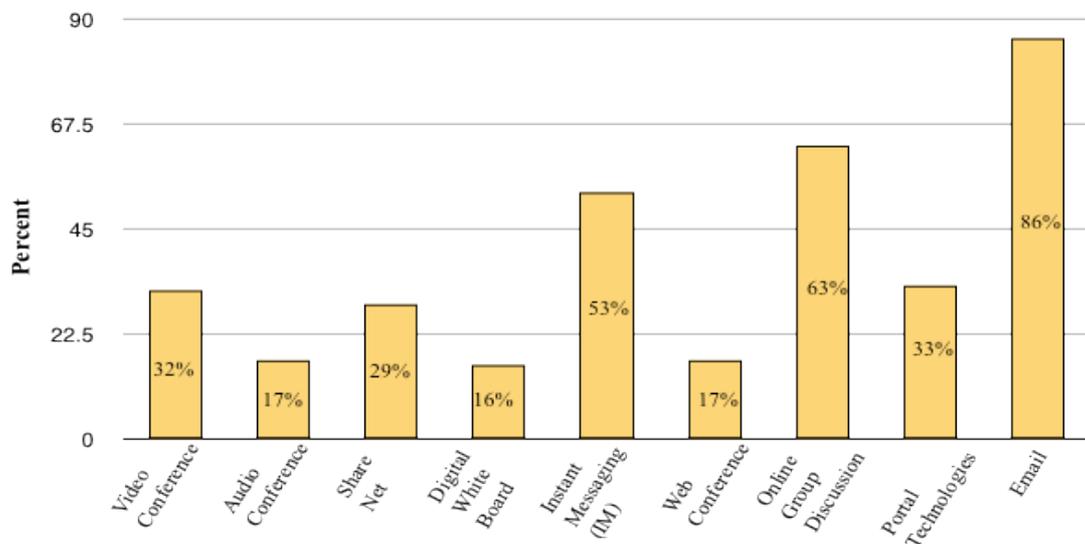
The initial step in this study was to explore to see how much of a lecturer’s routine academic interactions depend upon computers and Internet on a daily basis. According to the conducted survey, more than 50% of their normal daily tasks are performed online or in other words “virtually”. Additionally, the available tools at the university were investigated and the proper systems, from the lecturer’s point of view, were identified. In Table 1 the preferred tools, chosen by lectures, for sharing their knowledge is displayed.

Table 1. shows the most proper tools for knowledge sharing from respondent’s viewpoint. This question of survey has multiple check answer, meaning that each respondent could choose multiple answers. Each lecturer chose multiple answers for most proper tools for the purpose of online knowledge sharing.

For this question in survey as multiple answer question that each respondent could choose more than one answer, from 150 respondents, 129 respondents (86%) chose the email as most proper tool for online knowledge sharing, also 95 respondents (63%) from 150 chose the online group discussion, 80 of them (53%) from 150 total respondents chose instant messaging (IM), 50 respondents (33%) stated portal technologies as proper tool for knowledge sharing, 48 respondents (32%) voted for video conferencing, 43 respondents (29%) chose share net, 26 respondents from 150 respondents voted for audio conferencing and web conferencing and 24 respondents (16%) chose digital white board as suitable system for online knowledge sharing.

Tools	N	Minimum	Maximum	Mean	Percent
<b>Video Conferencing</b>	48	1	5	2.04	32%
<b>Audio Conferencing</b>	26	1	5	2.25	17%
<b>Share Net</b>	43	1	5	2.31	29%
<b>Digital White Board</b>	24	1	5	1.90	16%
<b>Instant Messaging</b>	80	1	5	3.44	53%
<b>Web Conferencing</b>	26	1	5	2.33	17%
<b>Online Group Discussion</b>	95	1	5	3.14	63%
<b>Portal Technologies</b>	50	1	5	3.11	33%
<b>Email</b>	129	3	5	4.76	86%

**Table 1:** Descriptive Statistics for Available technologies



**Figure 1:** The Most Proper Tools For Online Knowledge Sharing

## Conclusion and Future Research

Today users prefer to use virtual networks to share and transfer knowledge. They feel more comfortable with some systems; for instance, in this study we realized that university lecturers would rather to share their knowledge via Email. This selection may be based on several reasons that the most important of them can be due to its user friendliness and users' trust in this tool.

Future research should focus on the influencing factors causing the users to prefer Email, online group discussion, portal technology and IM; and the reasons why lecturers feel more comfortable practicing these tools should be examined by the regression analysis.

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