FACTORS INFLUENCING KNOWLEDGE SHARING BEHAVIOUR: DEVELOPING A THEORETICAL FRAMEWORK

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Abstract
In today's knowledge driven economy, creating a pro knowledge sharing environment and reinforcing actual knowledge sharing behavior is central to the success of any knowledge management (KM) initiative. Universities and Higher Education Institutes have an enormous scope to apply KM to acquire, use and leverage knowledge. This paper attempts to explore the factors that encourage or inhibit faculty knowledge sharing behaviour. The various factors influencing knowledge sharing have been categorized into individual, organizational and technological factors. Understanding of these motivators and barriers to knowledge sharing will help the top management of knowledge based organizations such as Universities and Higher Education Institutes to develop appropriate knowledge sharing strategies to instill knowledge sharing culture within the organization and foster the knowledge sharing behaviour of its faculty.

Introduction
In recent years, attempts to capture and leverage a firm's knowledge resources have become a major drive to the success of any organization. In today's knowledge driven economy, knowledge has become the strategic asset of an organization and especially in high knowledge intensive organizations, knowledge related competencies are the primary source of competitive advantage (Kankanhalli *et al*., 2005, Ried, 2003). Organizations are now attempting to manage knowledge in a more systematic and effective way. Knowledge Management (KM) initiatives are widely applied by the organizations to encourage the creation and sharing of knowledge. Effective implementation of knowledge management (KM) depends on several factors which include leadership, organizational culture, IT infrastructure, positive attitudes of the employees to share expertise and so on. A successful KM implies a good combination of both human participation and IT collaboration tools.
Within the overall KM domain, a critical area that needs more attention is knowledge sharing (KS). Knowledge sharing is central to the success of any knowledge management program. In the literature concerning KM within an organization, most researchers acknowledge the role of knowledge sharing and the need to foster knowledge sharing (Davenport and Prusak, 1998; Alavi and Leidner, 2001, Bartol and Srivastava, 2002, Cabrera and Cabrera, 2002, Bock *et al*, 2005). Although there are many benefits associated with knowledge sharing (Kautz and Mahnke, 2003), for the most part its facilitators are unknown (Szulanski, 1996; Wiig, 1997) and the organizational and individual enablers of knowledge sharing are not properly clarified (Connelly and Kelloway, 2003). Unfortunately, people do not share their knowledge under all circumstances and they enough reasons not to share their knowledge as much as the organization would like them to (Cho, Li, and Su, 2007).
Knowledge resides within individuals (Nonaka and Konno 1998) and, more specifically, in the employees who create, recognize, archive, access, and apply knowledge in carrying out their tasks. Consequently, the movement of knowledge across individual and organizational boundaries, into and from repositories, and into organizational routines and practices is ultimately dependent on employees' knowledge-sharing behaviours. When knowledge sharing is limited across an organization, the likelihood increases that knowledge gaps will arise, and these gaps are likely to produce less-than-desirable work outcomes (Baird and Henderson 2001). Even with the codification of knowledge, knowledge objects remain unexposed to (and hence unrecognizable by) others until the knowledge owner makes the objects available. In a practical sense, knowledge sharing cannot be forced but can only be encouraged and facilitated (Gibbert and Krause 2002). When people are motivated enough to share, a KM initiative will find its success (Connelly & Kelloway, 2001).

Knowledge
One of the most common ways to define knowledge is by differentiating it by what it is not by using the components of data, information and knowledge. Data

is considered to include numbers, images, words and sounds that are derived from observation and measurement and is still "raw", not analyzed. Information is then perceived as data that has been analyzed and arranged in a meaningful pattern, meaning that some intellectual input has been added to the raw data. Knowledge is considered to be information that has interpretation and meaning attached to it, adding a further layer of intellectual analysis. Davenport and Prusak (1998), defines knowledge as a fluid mix of framed experience, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information. Bartol and Srivastava (2002) consider knowledge a broad concept which "includes information, ideas and expertise relevant for tasks performed by individuals, teams, work units and the organization as a whole". Awad and Ghaziri(2004) define knowledge as human understanding of a specialized field of interest that has been acquired through study and experience.

Types of Knowledge

The most commonly used classification of knowledge in KM literature is the one between explicit knowledge and tacit knowledge (Ein-Dor 2006; Hislop, 2005). Explicit is knowledge is regarded as objective, composed of facts that can be codified into a tangible form like words and graphs, and is separate from individual and social values(Hislop, 2005). Explicit knowledge can be easily transferred to be available for enquirer and thus can produce greater value (McKenzie and Van Winkelen, 2004).

In contrast, tacit knowledge is personal, intuitive, insightful, context-sensitive, dynamically created and experienced-based, subjective and experiential (Nonaka, Toyama and Nagata, 2000; Greiner et al., 2007), and resides within the minds of people (Steward, 1999). It is hard to formalize and communicate to others. Tacit knowledge is deeply rooted in an individual's actions and experience, as well as in the ideals, values or emotions he or she embraces (Nonaka and Konno, 1998). It is something known but not easily articulated (Dixon, 2000). It is more problematic because it is not so easily disseminated (Mullin, 2005). This suggests that tacit knowledge is non-transferable without the exchange of key personnel and all the systems that support them, and may be best transferred through more interpersonal means and using processes that are less structured.

Knowledge Management

Knowledge management has been defined as the process of capturing, storing, sharing, and using knowledge (Davenport and Prusak 1998). Rowley (2000) describes the term KM as follows:

"Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives. The knowledge to be managed includes both explicit, documented knowledge, and tacit, subjective knowledge. Management entails all of those processes associated with the identification, sharing, and creation of knowledge. This requires systems for the creation and maintenance of knowledge repositories, and to cultivate and facilitate the sharing of knowledge and organizational learning. Organizations that succeed in knowledge management are likely to view knowledge as an asset and to develop organizational norms and values, which support the creation and sharing of knowledge".

In brief, KM is the management of processes that govern the creation, dissemination, and utilization of knowledge by merging technologies, organizational structures and people to create the most effective learning, problem solving, and decision-making in an organization.

Knowledge Sharing

Knowledge sharing means the methods and willingness of individuals in an organization to share the knowledge they have with others in the organization. Knowledge can be shared between and among individuals, within and among teams and organizational units and among organizations (King 2006). According to King (2006) sharing behaviour can be different whether tacit or explicit knowledge is shared. Knowledge sharing cannot be forced or mandated, but instead the behaviour should be facilitated and encouraged (Bock et al, 2005).

Knowledge sharing concerns the willingness of individuals in an organization to share with others the knowledge they have acquired or created (Gibbert and Krause, 2002). A firm can successfully promote a knowledge sharing culture not only by directly incorporating knowledge in its business strategy, but also by changing employee attitudes and behaviours to promote willing and consistent knowledge sharing (Connelly and Kelloway, 2003; Lin and Lee, 2004).The sharing could be done directly via communication or indirectly via some knowledge archive. Sharing of tacit knowledge mainly takes place through socialization, but the knowledge does not become explicit and the organization as a whole cannot not easily use it. Making tacit knowledge

explicit allows it to be shared within the organization and can be stored or formalized.

Review of Literature

The extensive review of previous literature on knowledge sharing recognizes the existence of different influences on employee knowledge sharing activities, such as individual, organizational, and technology factors (Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004). Referring to the individual dimension, most authors agree that knowledge sharing depends on individual characteristics, including experience, values, motivation, and beliefs. Wasko and Faraj (2005) suggested that individual motivators may enable employee willingness to share knowledge. Employees are motivated when they think that knowledge sharing behaviours will be worth the effort and able to help others. Therefore, the expectation of individual benefits can promote employees to share knowledge with colleagues. Furthermore, referring to the organizational dimension, organizational climate is usually made to capture efficiently the benefits of innovation-supportive culture (Saleh and Wang, 1993). In the context of knowledge sharing, the different aspects of organizational climate are critical drivers of knowledge sharing, such as reward systems linked to knowledge sharing (Bartol and Srivastava, 2002), open leadership climate (Taylor and Wright, 2004), and top management support (MacNeil, 2003; MacNeil, 2004). Finally, referring the technology dimension, ICT can be effectively used to facilitate the codification, integration, and dissemination of organizational knowledge (Song, 2002).

Previous Empirical Studies on Knowledge Sharing

Block, Zmud, Kim and Lee (2005) studied factors influencing an individual's knowledge sharing behaviour in corporate in respect of extrinsic motivators, social-psychological forces and organizational climate factors. The motivational drivers found were anticipated extrinsic rewards (montetary incentives or points towards promotion), anticipated reciprocal relationships (desire to maintain relationship with others), sense of self worth(sense of value brought by knowledge sharing through competence or power), fairness (trusting organizational climate), innovativeness (organizational climate that is tolerant of well-reasoned failure and where information flows freely) and affiliation (organizational climate with pro-social norms and willingness to help others).

Bock et al (2005) summarizes the factors of organizational climate that have an influence on individual's knowledge sharing behaviour to be climate where individuals highly trust each other and the organization, climate that is open with free flowing information, climate that is tolerant of failure and climate where pro social norms and willingness to help are valued.

Kim and Lee (2006) studied the impact of organizational context and IT on employees' perception of knowledge sharing. Research showed that social networks, centralization of organization structure, performance based reward systems, employee usage of IT applications and user friendly IT systems significantly affect employee knowledge sharing capabilities in both public and private sector. Social networks, performance based reward systems, employee usage of IT applications and user friendly IT systems influence positively on sharing knowledge, while centralization of organizational structure was seen to negatively influence the behaviour.

So and Bolloju (2005) researched the intention of IT professionals to share and reuse knowledge. All direct determinants of intention to share knowledge, except for subjective norm and intention to reuse knowledge were significant. All direct determinants except for subjective norm and intention to reuse knowledge were significant. The strongest significance was in the attitude towards intention to share knowledge, thus indicating that management should build positive attitude in their employees through improving relationships and recognition of their contributions.

Szulanki (1996) states that motivational forces derives from one of two bases: personal belief structure and institutional structures meaning the organizational climate including norms and values. In individual level knowledge sharing can be impacted by concerns over the individual's status or 'competitive advantage' over others being lost by sharing the valuable knowledge one possess (Huber 2001; Riege 2005; Hislop 2005; Fink and Disterer 2006). Riege (2005), Rugullies (2003), Garfield (2006) highlighted the importance of time in knowledge sharing, referring to lack of contact time and interaction between other knowledge workers in the organization and also lack of time to share knowledge in general when priorities are elsewhere. In order to motivate employees to share their knowledge, making sure they know the benefit it can bring to them and the entire organization is also important (Rugullies 2003; Garfield 2006).

Lu, Leung and Koch (2006) conducted two studies in the People's Republic of China to understand factors influencing knowledge sharing behaviour

within an organization. The result indicated that knowledge sharing behaviour is influenced by individual, interpersonal and organizational factors. From individual factors, greed (non cooperative behaviour, desire to use others' knowledge without reciprocation) was shown to reduce knowledge sharing and self efficacy (perception of person's ability to valuable contributions and their criticality) to increase it. Co-worker collegiality (interpersonal trust and teamwork) was shown to indirectly influence knowledge sharing in interpersonal level by lowering greed and increasing self efficacy. At organizational level, organizational support was proven to increase knowledge sharing by resulting in higher use of IT. The use of IT was related to sharing explicit knowledge than tacit knowledge, proving that technology alone does not support efficient knowledge sharing.

Neo (2002) in a study of knowledge sharing practices in a Singapore news company found that cultural factors have significant impact on individual's decision to share or hoard knowledge. His study revealed that lack of motivation; management support, trust, and teamwork spirit were considered as major barriers to knowledge sharing. It was also observed that 'knowledge is power' mentality was hindering to promote a knowledge sharing culture in the company. Incentives and reward mechanisms were considered favourable components of organizational culture for creating knowledge friendly environment. Meenakshi (2002) and Sundari (2003) surveyed the perceptions of teachers in Singapore schools about sharing knowledge in schools. They reported that teachers perceived sharing with their colleagues very helpful in enhancing learning and also viewed their own knowledge worthy of sharing with other colleagues. Teachers were willing to share and preferred knowledge sharing through casual meetings with their colleagues, online communication, peer coaching, and interactive workshops. They took full advantage of information technology for knowledge sharing but found them stressed because of time pressure. These studies stressed that to make knowledge sharing popular in schools KM practices must be embedded into teaching and learning activities.

Lim, Tang, and Yang (20004) reviewed the factors affecting the individual's knowledge sharing behaviour in the organizational context focusing on the impact of financial rewards and organizational behaviour on knowledge sharing. They noted that the knowledge sharing attitudes were more evident in a face-to-face context rather than the electronic medium. Employees were found to be more willing to share knowledge with increased rewards. The study recommended customizing the reward systems and knowledge sharing contexts in order to facilitate a smoother flow of knowledge in the enterprise.

Sun and Scott (2005) investigated barriers in knowledge transfer in four different levels in organizational learning: individual, team, organizational and inter-organizational. Factors found to be more significant barrier were, fear of loss of ownership, fear of loss of control of knowledge, individual values in respect of team values, personality differences and skills of communication and persuasion.

Summary of Factors Influencing Knowledge Sharing Behaviour

Based on the extensive review of previous literature on knowledge sharing, the factors influencing knowledge sharing may be summarised as individual, organizational, and technology factors (Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004).

Role of Individual Factors in Knowledge Sharing

Individual factors play a significant role in either encouraging or discouraging knowledge sharing behaviour. Some of the major individual factors influencing knowledge sharing are the perceived reciprocal benefits, reputation enhancement, rewards and incentives for knowledge sharing, fear of loss of knowledge power, enjoyment in helping others, degree of competition and seniority in the hierarchy, self efficacy and attitude towards knowledge sharing.

Role of Perceived Organizational Climate on Knowledge Sharing

Organizational climate guides the employee behaviour by conveying to them what behaviour is appropriate and desirable. Numerous studies have recognized the role of organizational climate as a critical driver of knowledge sharing behaviour and emphasized the need to create knowledge sharing organizational climate. The major organizational factors contributing to knowledge sharing may be summarised as top management leadership and support, teamwork, fairness, affiliation and innovativeness, organizational rewards for knowledge sharing and facilities for knowledge sharing available in the organizations.

Role of Technological Factors on Knowledge Sharing

Information and communication technology (ICT) use and knowledge sharing are closely linked, because ICT can enable rapid search, access and retrieval

and sharing of knowledge. Past empirical findings emphasise the role of technological factors on influencing knowledge sharing behaviour. The role of technological factors in positively or negatively influencing knowledge sharing can be summarised in terms of perceived usefulness of technology, availability of technology and the degree of usage of ICT.

Summary and Conclusion

For any organization to stay ahead of their competition, they must be able to exploit the internal knowledge that resides within the human memory of their skilled employees. To convert individual knowledge into organizational knowledge, individuals must consciously undertake the task of sharing their knowledge. Therefore an understanding of factors influencing knowledge sharing will help the organization to build knowledge sharing climate and encourage knowledge sharing. From the overall analysis of previous empirical findings on knowledge sharing behaviour, the factors influencing knowledge sharing can be broadly categorized into individual, organizational and technological factors. Knowledge sharing behaviour is a complex process that is determined by multiple factors ranging from soft factors (organizational culture and climate, individual attitude etc) and hard factors (IT, organizational incentive systems etc). Thus understanding of these factors influencing knowledge sharing behaviour will help the top management and leadership of knowledge intensive organizations such as Universities and Higher Education Institutes to contribute towards formulating motivational strategies to enhance knowledge sharing behaviour of its faculties and build knowledge sharing climate within the organization through effective strategies to foster, facilitate and reinforce the knowledge sharing behaviour of its faculty members.

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