KNOWLEDGE SHARING BEHAVIOR AND KNOWLEDGE MANAGEMENT CAPABILITY IN ENGINEERING ORGANIZATION

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ABSTRACT
The purpose of this paper is to examine the relationship among the Knowledge Sharing Factors, Knowledge Sharing Intention, Knowledge Sharing Behavior and Knowledge Management Capability. For this study, a sample of 109 executive engineers of a leading Engineering Organization, from Trichy was drawn from the population of 750 executive engineers using a structured questionnaire. The results of Partial Least Square Path Modelling (PLS-PM) have shown that the Attitude, Subjective Norms and Perceived Behavioral Control are found to be significant predictors of Knowledge Sharing Intention, then the Knowledge Sharing Intention of executive engineers are positively significant with Knowledge Sharing Behavior and Knowledge Sharing behavior of executive engineers plays a vital role in the Knowledge Management Capability of the Organization.

Key words: Knowledge Sharing Intention, Knowledge Sharing Behavior, Knowledge Management capability and Partial Least Square – Path Modeling (PLS-PM)


1. INTRODUCTION
The survival of almost all organization is dependent upon the creation and utilization of new knowledge and it is therefore inevitable that knowledge needs to be shared. To create a knowledge sharing culture you need to encourage people to work together more effectively, to collaborate and to share in order to make organizational knowledge more productive. The sharing of knowledge is crucial in business because the new knowledge leads to sustainable competitive advantage in the form of competitive intelligence. Also the tacit knowledge resides in the minds of personnel and this knowledge will be lost when they leave the organization. The extent of the knowledge is so wide and substantial that it can result in organizations, large and small, “not knowing what they know.” There is no standard expertise knowledge among organizations. Knowledge sharing also be fosters innovation by encouraging the free flow of ideas; encourages staff innovation and creativity, provides a feedback loop to re-work and re-use knowledge for the benefit of the organization and improves performance.

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To leverage and manage organizational knowledge resources, organizations are adopting knowledge management (KM) initiatives and are investing heavily in information and communication technologies in the form of knowledge management systems (KMS) (Davenport & Prusak, 1998; Alavi and Leidner, 2001; Osterloh et. al., 2000; Zack, 1999). Knowledge management rallies around building the organization’s ability to acquire, organize and diffuse the knowledge throughout the organization with the objective of improving its effectiveness, efficiency and competitiveness (Alavi and Leidner, 1999). A key enabler of knowledge management is knowledge sharing (Nonaka and Takeuchi, 1995; Alavi and Leidner, 2001). Sharing knowledge, many organizations assert is crucial to exploiting core competencies and to achieve sustained competitive advantage (Argote and Ingram, 2000; Gold et al., 2001). Prahalad and Hamel (1990) observe that organization’s core competencies reside in the collective learning of the organization be it production, marketing or technological capabilities, that are inimitable by the competitors. To allow collective learning and to grow knowledge assets, an organization must develop an effective knowledge sharing process and encourage its executive engineers and partners to share knowledge about customers, competitors, markets, products and so forth (Bock & Kim, 2002; Pan & Scarbrough, 1998; O’Dell & Grayson, 1998; Osterloh et al., 2000).

In the contemporary knowledge-driven economic environment, the development and management of critical knowledge have become a critical and challenging task for managers to acquire sustainable competitive advantages of their organizations. To acquire sustainable competitive advantages, encouraging executive engineers in different units to actively share knowledge with one another to enable them to develop skills and competences is a vital prerequisite. However, managers find it practically difficult to facilitate effective interpersonal knowledge sharing activities among executive engineers in organization because of a variety of human and organizational/environmental factors, including concerns related to interpersonal relationships, self-interests, and organizational incentives (Yang & Wu 2008). Therefore, researchers have intensively investigated the human and organizational factors that influence individuals’ intention to share knowledge among one another in various organizational contexts (Bock et al. 2005; Bock et al. 2006; He & Wei 2009; Kankanhalli et al. 2005; Leonardi & Treem 2012; Lin et al. 2009). Therefore, additional research that investigates how organizations may establish an environment that motivates knowledge sharing behaviors from a holistic perspective is necessary in order to enhance the organizations’ ability to plan for, evaluate, and, justify their efforts to encourage executive engineers’ knowledge sharing behaviors.

Knowledge is the most important intangible asset; therefore business managers strive in many ways to use this asset to create the highest value (Quintas, 2002). However, how to efficiently control, apply, and develop knowledge in order to effectively generate and reuse knowledge is determined by enterprises’ knowledge management (KM) capabilities (Davenport et al., 1998; Leonard-Barton, 1995; Soo et al., 2002). In other words, it is important to investigate how an enterprise effectively develops its KM capability in order to provide and share intangible assets to win market competition. Furthermore, the rapid development of technology and the internet not only accelerates the changes of external environments, but also pressures enterprises to recognize that they need to evolve along with the market trends and environmental changes. Due to the fact that the basic perspectives on traditional resources lack a mechanism for transforming resources into competitive advantages, an enterprise may be unable to identify the middle- and long-term dynamic changes in the environment in order to immediately respond to market changes. Therefore, the only solution for an enterprise to enhance organizational performance is through enhancing its corporate dynamic capability (Afuah, 2001). Furthermore, in previous studies, many scholars have confirmed that KM capability and dynamic capability influence organizational performance (Hasan and Al-hawari, 2003; Bassie, 1997; Wiig, 1997).

Capability refers to the ability to implement and integrate resources to achieve corporate goals, as well as results acquired from long-term accumulation of interaction among various resources (Grant, 1995). KM capability is the ability of an enterprise to leverage existing knowledge through continuous learning to create new knowledge (Bose, 2003). Liu et al. (2004) stated that KM capability not only refers to the ability to acquire knowledge and information, but also to the organizational capability to protect knowledge and information in order to encourage staff to use this ability as a tool to work more efficiently. Freeze and Kulkarni (2007) further indicate that effective leverage of different knowledge capabilities can be done through differing strategies, processes, and technologies. Due to the fact that knowledge is a key strategic resource to create corporate value (Drucker, 1993; Zack, 1999; Bhatt et
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type or number of communication channels. Similarly, Gupta and Govindarajan (2000), equating knowledge sharing to knowledge flows theorize that knowledge flows comprise of five elements: value of the source knowledge, willingness of the source to share knowledge, media richness of the communication channel, willingness of the recipient to acquire knowledge and the absorptive capacity of the recipient. Davenport and Prusak (1998) define knowledge sharing as process that involves exchanging knowledge between individuals and groups. Connelly and Kelloway (2003) define knowledge sharing as “a set of behaviors that involve the exchange of information or assistance to other. It is separate from information sharing, which typically involves management making information on the organization available to executive engineers. Whereas knowledge sharing contains an element of reciprocity, information sharing can be unidirectional and unrequested”.

Connelly and Kelloway (2003) investigated a number of factors that impact executive engineer’s perceptions of a knowledge sharing culture. The identified factors can be broadly categorized into groups: organizational factors and individual factors. Organizational factors include individuals’ perceptions regarding management support for knowledge sharing, their perceptions about a positive social interaction culture, organization’s size, and the presence of technology that can facilitate knowledge sharing. Individual factors include age, gender and organizational tenure. The research findings suggest perceptions about management’s support for knowledge sharing, and perceptions of a positive social interaction culture to be significant predictors of a positive knowledge sharing culture. Organizational size was negatively related to positive knowledge sharing culture such that smaller organizations were linked more with positive knowledge sharing culture. Lastly, gender was found to be significant moderator such that female participants needed more positive social interaction culture before they would perceive a knowledge sharing culture as positive in contrast to their male counterparts.

Constant, Keisler and Sproull (1994) studied the factors that support or constrain information sharing in technologically advanced organizations. The factors they looked into are work experience, computer experience, year of training and perceptions about organizational ownership of information. Using interdependence theory (Kelley & Thibaut, 1978), the researchers advanced a theory of information sharing. Researchers contend that information sharing behavior is affected by rational self-interest as well as the social and organizational context. The results of their laboratory studies indicate that attitudes about information sharing depend on the form of information. While sharing tangible information depend on pro-social attitudes and norms of organizational ownership, sharing expertise depends on people’s own identity and self-expressive needs.

Osterloh et al., (2000) assert that effective knowledge creation and transfer is closely related to the motivation management. They analyzed various organizational and motivational devices with respect to their suitability to generate and transfer knowledge. In doing so, they noted that certain organizational forms have the capacity to crowd out intrinsic motivation and therefore are detrimental to the effective transfer of knowledge.

4.3. Knowledge Management Capability

Gold et al. (2001) pointed out that KM capability consists of knowledge infrastructures and KM processes. The knowledge infrastructure includes technology, structure, and culture; while KM processes include the organizational capabilities of knowledge acquisition, conversion, application, and protection. Simultaneously, in order to effectively leverage knowledge infrastructure, it is crucial to rely on KM processes, which makes it possible to store, transform, and transfer knowledge.

Tanriverdi (2005) investigated the influence of KM capability on the corporate performance of multi-business-unit corporations and divided KM capability into product KM capability, customer KM capability, and managerial KM capability. Furthermore, Tanriverdi also described knowledge creation, transfer, integration, and leverage as the four main dimensions to measure the influence of three kinds of KM capability on corporate performance.

Fan et al. (2009) further combined knowledge infrastructure and KM processes and proposed seven attributes (i.e. technology, structure, culture, acquisition, conversion, application, and protection) to be applied in a fuzzy multiple decision-making method to measure organizational KM capability.

On the other hand, Aujirapongpan et al. (2010) explained corporate KM capability based on the perspectives of resource-based and knowledge-based capabilities. Resource-based capability refers to different angles of resources to investigate KM capability and an assumption that possessing different
resources will result in different KM capabilities and influence the infrastructure capability of KM capability, including technology, organizational structure, and culture.

5. RESEARCH MODEL
Research model is descriptive in nature. It is a detailed plan of how the goals of research will be achieved. For the present study, single cross sectional Survey research model is used in order to understand the relationship among knowledge sharing Intention, Knowledge Sharing Behavior and Knowledge Management Capability. This research curiosity has led to the construction of following research model (figure 1) and its corresponding hypotheses.

H1: Attitude towards Knowledge Sharing has significant positive association with knowledge sharing Intention.

H2: Subjective Norm has significant positive association with knowledge sharing Intention.

H3: Perceived Behavioral Control has significant positive association with knowledge sharing Intention.

H4: Knowledge Sharing Intention has significant positive association with knowledge sharing Behavior.

H5: Knowledge Sharing Behavior has significant positive association with knowledge Management Capability.

Figure 1 Proposed Research Model
6. RESEARCH METHODOLOGY
This basically is an empirical study and as the name suggests it relies on experience or observation alone, and it can even be without due regard for system and theory (Kothari, 2004). This is basically a data-based research, which can give conclusions based on observation. As far as the approach is concerned, it is both qualitative as well as quantitative in nature. Literature pertaining to Knowledge Sharing Intention, Knowledge sharing behavior and Knowledge Management Capability have been studied to understand the relevance of each one of them, and also, to study their antecedents and consequences of the same and used in the formulation of the working hypothesis.

7. RESPONDENTS
The respondents are executive engineers of a leading engineering organization - Trichy. The workforce comprises over 750 executive engineers. The sample size of the study is 109 executive engineers. Disproportionate simple random sampling was adopted. Pilot study was undertaken with a sample of 30 random executive engineers so that necessary modifications can be incorporated to enhance the quality of survey instrument. The reliability and convergent validity of the instrument have been verified. Finally, the metric in the form of a self-administered questionnaire with 5-point Likert scale was distributed to 155 executive engineers (response rate 70%), who are basically executive engineers working in a leading engineering organization - Trichy, to collect data.

8. QUESTIONNAIRE
The questionnaire consists of two parts namely Part I and Part II. The part I contained 9 questions on Demographic factors of users such as Name, age, gender, Marital Status, educational qualifications, experience, department, designation and Annual Income. Part- II consists of the conceptual factors such as, Knowledge sharing behavioral factors with 16 questions, Knowledge sharing intention with 7 questions, Knowledge Sharing Behavior with 7 questions and Knowledge Management Capability with 21 questions. The scaling values are 1- Strongly Agree; 2- Agree; 3- Neutral; 4- Disagree; 5- Strongly Disagree.

9. SAMPLE CHARACTERISTICS
Out of 109 respondents, 67 percent of the executive engineers were Males. 18 percent of the executive engineers were between the age group of 36-45 years. Nearly 50 percent of the executive engineers were married. 50 percent of executive engineers were UG degree holders. 39 percent of executive engineers were working for 2-3 years. About 40 percent of executive engineers were in cadre of Engineers. 33 percent of executive engineers were working in engineering department. About 27 percent of executive engineers were drawing a monthly salary ranging from 50001 - 75000.

10. DATA ANALYSIS
10.1. Reliability and Validity
The study has employed ‘Cronbach alpha coefficient’ for assessing the reliability of the scale. According to Nunnally (1978), Cronbach alpha level of 0.60 or above is considered to be acceptable for construct. Also, Convergent validity of all the constructs was examined using the measure of Average Variance Extracted (AVE) that is the average variance shared between a construct and its items (Fornell & Larcker, 1981). Chin et al 1999 & 2003 indicated that a construct with an AVE of over 0.5 is expected to have adequate convergent validity.
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As presented in figure 2 and table 3, the path linking Attitude towards Knowledge Sharing to Knowledge Sharing Intention was found to be significant at 0.05 level (beta=0.367, t=6.497), indicating Attitude towards knowledge sharing has significant effect on Knowledge sharing intention. This provides support for H1.

The path linking Subjective Norms to Knowledge Sharing Intention was found to be significant at 0.05 level (beta=0.255, t=6.497), indicating Subjective norms towards knowledge sharing has significant effect on Knowledge sharing Intention. This provides support for H2.

The path linking Perceived Behavioral Control to Knowledge Sharing Intention was found to be significant at 0.05 level (beta=0.374, t=4.511), indicating Perceived Behavioral Control has significant effect on Knowledge sharing Intention. This provides support for H3.

The path linking Knowledge Sharing Intention to Knowledge Sharing Behavior was found to be significant at 0.05 level (beta=0.817, t=31.071), indicating Knowledge sharing intention has significant effect on Knowledge sharing behavior. This provides support for H4.

The path linking Knowledge Sharing Behavior to Knowledge Management Capability was found to be significant at 0.05 level (beta=0.954, t=99.240), indicating Knowledge sharing behavior has significant effect on Knowledge management capability. This provides support for H5.

Collectively, Attitude towards Knowledge Sharing, subjective norms and perceives behavior control explained about 84 percent of the variance in the knowledge sharing Intention of executive engineers. In addition, the knowledge Sharing Intention explained a variation of 66 percent in Knowledge Sharing Behavior. And the Knowledge Sharing Behavior explained about 90 percent of the variance in the Knowledge Management capability.

11. DISCUSSION
11.1. Knowledge Sharing Intention
It is theorized that Knowledge Sharing Intention are to be predicted by Attitude towards knowledge sharing, Subjective Norm and Perceived Behavior Control. In other words, it can be understood that
Knowledge Sharing Behavior adopted by the organization significantly predicts Knowledge Sharing Intention of executive engineers.

The overall results of the structural model analysis revealed that Attitude towards knowledge sharing, Subjective Norm and Perceived Behavior Control acted as significant predictors in Knowledge Sharing Intention among executive engineers.

From the analysis, it is revealed that Attitude, Subjective Norm and Perceived Behavior Control had a significant effect on Knowledge sharing Intention. This finding is consistent with the findings of Bock, Zmud, Kim and Lee (2005). In this the researchers found that the attitude towards knowledge sharing along with the subjective norms and organizational climate influence individual’s intention to engage in knowledge sharing behavior. It implies that the attitude towards knowledge sharing increase the knowledge Sharing Intention among.

11.2. Knowledge Sharing Behavior
In this study, it is hypothesized that Knowledge sharing Behavior of an executive engineers is to be determined by Knowledge Sharing Intention of executive engineers. It implies that Knowledge sharing intention is the significant predictor of Knowledge Sharing Behavior. From the analysis, it is found that Knowledge sharing intention had a significant effect on Knowledge Sharing Behavior.

11.3. Knowledge Management Capability
From the analysis of this study it is hypothesized that Knowledge Management capability is to be determined by Knowledge Sharing Behavior of executive engineers. It implies that Knowledge sharing Behavior is the significant predictor of Knowledge Management Capability. From the analysis, it is found that Knowledge sharing behavior had a significant effect on Knowledge Management Capability.

11.4. Research Limitations and Future Research
There are few limitations to this research study. First, the research setting for the current study was a leading engineering organization in Trichy district. Respondents were limited to executive engineers of the leading engineering organization in Trichy only. As such, the study may limit the extent to which respondent behaviours can be generalized to the general work force. The results of this study can be regarded as being representative of the perceptions of the general knowledge work force. To further increase the generalizability however, future research should replicate the study’s findings with larger samples and in different contexts. Second, the study focuses on attitudes towards knowledge sharing, subjective norms and perceived behaviour control that influence knowledge sharing Intention of knowledge workers. Future research should focus on other Knowledge Sharing factors. Finally, the study’s findings are based on the modest sample size of 109 respondents. Although PLS Graph can handle small sample sizes and generates valid results, a larger sample with more statistical power would have permitted me to use other covariance based structural equation modelling tools such as LISREL. Future research should verify the findings of this research study using covariance based tools.

11.5. Implication for Practice
The study has highlighted the importance of Knowledge Sharing Behavior in Organizations and its corresponding impact on the Knowledge Management Capability. The Attitude towards knowledge sharing, Subjective Norms and Perceived Behavioral control. It will enable the organization to pay special focus on these three Knowledge Sharing factors which are important in predicting Knowledge Management Capability through Knowledge Sharing Intention.

In addition, this paper has put forward some valuable insights to guide executive engineers who are in practice, to identify problems in their respective areas and will help them in getting rid of the same by taking self-corrective actions.

Moreover, at final the Attitude towards knowledge sharing, Subjective Norms and Perceived Behavioural Control should always adopted by executive engineers as Significant Parameters for Knowledge Sharing Intention, in which Knowledge Management capability of an organization can be flourish.
12. CONCLUSION

In conclusion, the purpose of this study is to investigate the associations between the Knowledge Sharing Intention, Knowledge Sharing Behavior and Knowledge Management Capability among executive engineers of a leading engineering organization in Trichy. A sample of 109 executive engineers was drawn from a leading engineering organization in Trichy. A model is developed and tested using structured modeling approach. The empirical findings have revealed that Attitude towards knowledge sharing, Subjective Norms and Perceived Behavioral Control are associated with Knowledge Sharing Intention. As the same the Knowledge Sharing Intention of the executive engineers are also been significant with the Knowledge Sharing Behavior of the executive engineers. Also, the findings have demonstrated that the knowledge sharing behavior of executive engineers is closely linked to Knowledge Management Capability of the Organization. It is concluded that when there are Proper way is for to share knowledge in organization, it will encourage executive engineers to share the knowledge. When there is effective Knowledge Sharing Behavior among executive engineers, it will result in the development of Knowledge Management Capability in Organizations.

13. REFERENCES


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