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KM Facing Simultaneous Obstacles and Strategic Benefits Realization: A Continuing Conundrum

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ABSTRACT

This research identifies and establishes the most common and persistent obstacles faced by organisations in the development and implementation of knowledge management (KM) strategies, and strategic benefits that are realised. This study discloses a conundrum in the pattern in the maturity level of the KM initiative and simultaneous obstacles faced by the organisation at these maturity levels. This paper provides a background to the study, analysis of survey results, discussion and conclusion. Survey responses indicate both major themes and those that are lesser reported. The most common and ubiquitous challenge an organisation faces in the present time is the widespread lack of understanding of what KM is. Of only slightly lesser importance to that are obstacles within the organisational culture to effective implementation of KM, 'commitment to cause' and absence of formalised knowledge processes are major themes. Discussion further sheds light on the strategic benefits realised and attributed to KM. This research study findings may guide in examining theory and practice in the preparation and implementation of knowledge management initiatives.

Keywords
Knowledge management, strategic benefits realization, obstacles to knowledge management

INTRODUCTION

Moving through the 21st century, the rising importance knowledge to differentiate between organizational successes and failures has caused traditional factors of production like capital, resources, location and land to diminish in importance (Spender, 1996). Organisations now compete on the basis of knowledge as a competitive asset and a source of competitive advantage as well (Grant, 1996). In our dynamic, highly competitive knowledge economy firms rely heavily on their knowledge assets and intellect for achieving sustainable competitive advantage and organizational success (Drucker, 1992). Knowledge is both the input as well as the means to achieve organizational success and maintain competitive advantage over others (Zack, 1999). The growing importance of knowledge management (KM) can be credited to the newly acknowledged factor of success i.e. knowledge. In spite of the large proportion of relevant literature substantiating the vast amount of research already done in the field of KM there is very little agreement among the practitioners and researchers alike. There is not one universally accepted standard or definition of KM and associated activity that is evident in the literature. The primary challenges and obstacles related to KM as identified here relate to the understanding of philosophy behind KM and to continuing issues of organizational culture. These two challenges closely follow the need for individual commitment to cause and the need for established KM frameworks.

This paper first discusses knowledge and its management, and will look at different views on KM. We discuss recent research to establish the obstacles faced by organisations and strategic benefits realised that are attributed to KM. The paper will then provide thematic analysis of the survey responses and list the more prominent obstacles and challenges to a KM initiative as well as list the strategic benefits realised and attributed to KM. This paper juxtaposes and gives insights into the challenges and obstacles against strategic benefits realised by organisations in effective KM implementation. It analyses these elements in relation to KM maturity levels and explores the conundrum of simultaneous benefits realisation with ongoing obstacles to KM implementation.

DEFINING KNOWLEDGE AND ITS MANAGEMENT

Knowledge is, in itself multifaceted. Knowledge is something that can be acquired, shared and applied (used and reused), it is made up of truths and beliefs, methodologies, know-how and judgments (Wiig, 1993). Management of knowledge is not a new practice although it is a relatively recently formalized business concept. Some might say has existence since the early days of civilization but in primitive and informal forms, it lacked purpose and structure. Whether knowledge was disseminated and transferred to coming generations through rock art paintings in the caves of hunters and scavengers or embedded and codified in the holy texts such as the Bible and the Bhagwad Gita it was certainly not acknowledged as KM! Rapid industrialization of the world, economic growth and modernization has been fuelled by advancements in technology, social sciences and linguistics. At the same time we find an escalation of the methodologies, tools and techniques and the frameworks available to create, capture and codify, dissimilate and manage knowledge have developed (Zack, 1999a). "Knowledge is the fluid mix of framed experiences, values and contextual information and insights. It originates and is applied in mind of knower's" (Davenport and Prusak, 2000, pp.5).

Knowledge management is a multi dimensional subject area. We can trace the roots of knowledge management in information management. Developments in computerization made it easier for the organization to capture, codify and use and reuse knowledge (Malhotra, 2001). KM can be best described as the set of coordinated and carefully planned activities that facilitate knowledge creation, codification, sharing and reuse of enterprise knowledge resources (Grey, 1996). The KM process is an iterative, never ending, continuous and spiral process. Knowledge management or KM is the process of collection, distribution and efficient use of knowledge resource. It is the process of capturing, creating, validation, presentation, dissimilation and application of knowledge (Davenport and Prusak, 2000). KM can also be defined as "art of transforming information and intellectual assets into enduring value for organizations" (Knapp, 1998). Knowledge management enables the organizations to act diligently to achieve success and realize the value of its knowledge assets (Wiig, 1997). Knowledge is information in action and knowledge management is systematic approach to find, understand and use organizational knowledge to create value (O'Dell and Grayson, 1998). Knowledge management is about getting the right information to the right people at the right time, facilitating exchange and sharing of knowledge and place information and knowledge into actions to develop and derive business performance (American Productivity Quality Centre, 1999). Murray (1998) defines KM as the strategic conversion of the explicit and tacit knowledge of the employees to create value, accelerate productivity and to increase competitiveness. While Davenport (1999) in the same period described KM as set of procedures, tools and techniques to leverage knowledge for competitive advantage, better decision making, and improvements in performance of individual as well as the enterprise as a whole. Binney (2001) critiques knowledge management when treated from a technology perspective or technology supported business process perspective and suggests that an appropriate definition of knowledge management rests on both perspectives

Knowledge management is a way of understanding and leveraging organizational knowledge to manage and perform work (DeTienne, Dyer, Hoopes and Harris, 2004). Knowledge management is the formulation of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value (Beckman, 1997). We suggest that knowledge management is the coordinated set of activities for managing and optimal utilization of the knowledge resources within an organisation.

Knowledge in itself is a very complex entity to be defined. Knowledge is defined as meaningful information, it is the information in action, it is justified true beliefs (Davenport and Prusak, 2000). Knowledge is subjective and gained over a period of time. Knowledge can further be defined as information with context (Zack, 1999a). KM on the other hand is the set of coordinated activities to manage the knowledge resource of an organization. Thus for an organisation to effectively implement its KM initiative, it needs to thoroughly understand what is knowledge. Kalkan (2008) suggests that organisations need to develop a working definition of knowledge so as to manage it. As knowledge is subjective, it's imperative that everyone in the organization understands the true value of knowledge and its utility in their day to day activities. KM needs to be treated as a part of day-to-day activity; it must be considered a primary activity rather than secondary activity.

This research presents the understanding of KM by variety of businesses spread across geographies. Thus, this study examines a broad cross section of industries to identify and establish obstacles and challenges faced by organisations to knowledge management and the strategic benefits realized as a result of successful implementation of a knowledge management initiative.

KM OBSTACLES, CHALLENGES AND STRATEGIC BENEFITS

KM is attracting wide spread attention from all areas of research in the present times and people now have high expectations of KM initiatives in terms of both financial rewards as well as intangible benefits. This largely depends upon the successful implementation of KM initiative. Irrespective of the type of industry and maturity level of KM, every organization is bound to face certain challenges and issues. A majority of these challenges and issues can be attributed to the lack of understanding of what KM is about. Treating KM as a nice to have and on the shelf product will not deliver any deliverables. Inability to effectively link KM initiatives to economic performance, ambiguous purpose and definitions, lack of management support, rigid organizational and hierarchical structure all pose as a challenge to KM initiatives (Davenport, Long and Beers, 1998). KM initiatives need be aligned with the strategic objectives of the organization. Once these initial problems are resolved then the focus can be shifted on to measurement of KM effectiveness and utility. Some of the other challenges to KM are lack of understanding of KM, cultural complexity, cost and ROI, skill shortage and the change it brings along with (Kalkan, 2008; Alavi and Leidner, 1999). Knowledge hoarding also results in serious implications for the success of KM initiative, the challenge is to cultivate a culture that promotes knowledge sharing. It is vital to make employees understand that by holding on to a piece of knowledge they are doing more harm than good to any. Another way of promoting a knowledge sharing or collaborative work culture where learning by sharing is the norm is by awarding some form of financial or non-financial rewards and recognition for sharing knowledge and expertise (Milne, 2007). Increased collaboration and cooperation, improvements in the process efficiency and effectiveness, improved creativity and risk taking, reduced cycle times, better decision-making capability and transition to an agile organisation are some of the benefits obtained because of successful KM implementation (North and Hornung, 2003).

Organizational Culture

Culture or popularly referred as organizational culture of a firm is reflected in the values and beliefs that influence behaviour at workplace. Organizational culture can be defined as the habits of people and how they behave, react and function in the organization. It is often the unstated, unwritten rules within the organization. It defines the informal code of conduct and many a times outlines what is expected and not expected of you. Effective, efficient and optimal utilization of knowledge and knowledge management is effected by organizational culture. Organizational culture develops over a period and people are important aspects of culture. It is one of the most critical factor in assessing the success or failure of any kind of knowledge management initiative (Owens and Steinhoff, 2007).

Knowledge management and organizational learning go hand in hand, it is necessary to internalize the knowledge through application or reuse, understand the contextual meaning of the knowledge and most importantly the culture and the people. Organizations culture not only impacts knowledge management but also organizational learning and overall performance of the enterprises in context to knowledge management and knowledge application to deal with changing dynamics of business. Knowledge and KM plays the role of a major determinant in attaining competitive advantage over competitors. If the culture is not conducive to improvements and learning, does not welcome change and is not flexible it will hinder KM initiatives and ultimately improvements and innovations (Long and Fahey, 2000).

Organization's collaborative culture greatly effects the knowledge management, enhances the organizational leaning and influences performance of the firm (Lopez, S.P., Peon, J.M.M, Jose, C. and Ordas, V., 2004). If the culture does not value and encourages networking, mutual respect and trust, creativity and innovation, risk taking, sharing of information, knowledge and continuous learning and development it is highly unlikely that any sort of KM initiative will be successful in such a an organization. Additional factors to be considered are a culture of trust, security and collaboration that are key in encouraging innovation, creativity, risk taking and enhance effective knowledge management (Gold, Malhotra and Segars, 2001). Having a collaborative culture assists in better management of knowledge, improved performance and learning. It can be suggested that not only does collaborative culture but various other factors greatly contribute to effectiveness and full utilization of knowledge and KM. These factors can be listed as reputation of employees, incentives, completed tenure in the firm, educational level of employees, levels of trust, rewards, structure of organization, existing information systems and technology applications, work groups and team sizes all effect knowledge management (Binney, 2001; DeLong and Fahey, 2000; Milne, 2007; O'Dell and Grayson, 1998). Ineffective communication and a change resistant culture not only create problems in managing knowledge but also hamper organizational

learning and lowers down the performance of the firm. Just by working together in teams with each other does not necessarily mean the desired outcome is attained. To make KM more efficient an open culture of trust where sharing is means to increasing knowledge, open and transparent communication (Politis, 2003), having reward system in place to motivate the individuals are some of the factors that are integral to organizational culture which affects KM (Milne, 2007). Collaborative culture doesn't necessarily means a source of competitive advantage, it modifies organizational learning, modifies work practices and attitude of firms to externalities in handling competition. Organizational culture not only affects organizational learning but also implementation of KM initiatives, organizations learn as people working in the firm learn. Having state of the art technology infrastructure is of no use until and unless the most critical part of the knowledge ecosystem i.e. organizational culture which again constitutes people are ready to work collaboratively and are rewarded and recognized for their contribution to knowledge management (DeTienne, Dyer, Hoopes and Harris, 2004).

Organizational culture greatly influences the KM approach taken by organizations. DeLong and Fahey, (2000) describe an industrial culture that has limited information distribution, hierarchical structure and rules based to one which is knowledge based having wide distribution of information, flattened or networked with shared responsibility. They then discuss how it is will inevitably adopt a different approach towards their KM initiatives than those taken by a flattened and networked organisation. Culture is made up of beliefs and justifications; it is held tacitly and reflected in employee's nature and is ingrained in people. KM is not about dramatically changing the culture of the organization, but rather cultivating and fostering a sharing and collaborative culture that ultimately helps the organizations to effectively and efficiently utilize their knowledge resources and potentially realize strategic benefits from KM implementation. An attempt to encourage knowledge sharing is another push towards KM. Growing and nurturing information sharing, knowledge sharing and collaborative working culture organisations can become successful in their KM initiatives.

Knowledge and KM Strategy

Like business strategy, knowledge strategy must seek to support achievement of the aims and objectives of the organisations. Knowledge strategy must take into account the organisation's knowledge resources and capabilities and identifies knowledge gaps and the KM strategy implemented to fulfil these knowledge gaps is referred as knowledge strategy (Zack, 1999). Lack of a knowledge strategy, KM framework or methodology must result in limited or under utilisation of knowledge resources. Due to growing strategic importance of information and knowledge ((Spender, 1996), there has been a dynamic shift in the how these need to be managed and how knowledge, technology and business strategy needs to be aligned for optimal utilisation of knowledge and intellectual capital

Addressing people issues is the biggest challenge a KM practitioner faces today, as it is widely acknowledged that people or the human resource is the biggest factor affecting outcome of a KM initiative, it has more influence on the outcome of KM initiative than the technology or the business process. The success or failure of a KM initiative largely depends on the top management support, knowledge champions and subject matter experts who are actively involved in promoting knowledge sharing and collaboration. The effectiveness and penetration of the KM programs within the organisation is the function of the support and involvement of the top management. Greater the support and involvement greater the penetration, limited support results in minimal penetration. Involvement of C level executives not only ensures that the KM initiative is very well advocated within the organisation but also the KM initiative will get a seat at strategic level (DeTienne, Dyer, Hoopes, & Harris, 2004). Leaders again play a very important part in promoting knowledge sharing culture and they act as the change agents as well. Without the support and commitment of top management and functional leaders in the organisation towards KM, it is highly improbable that KM will be accepted by lower level management or by operational staff. Only after top management employees, officer bearers and C level executives show their support and commitment to KM, then only the middle and /or lower level employees are going to accept KM (Ribiere and Sitar, 2003). Without proactive KM champions and practitioners and without support from top management it is difficult to deliver successful KM initiative and drive home the benefits.

Another important factor in determining the outcome of any KM initiative is its alignment with the forms business strategy. KM strategy is always designed keeping in mind the organisational objectives and goals. KM objectives are meant to be directed at fulfilling firm's objectives and goals. KM initiative needs to be aligned with the firm's objectives and goals, they are supposed to be developed keeping in mind the specific objectives and purpose they will serve. KM initiatives must thrive to provide financial savings and providing a sustainable competitive advantage over others, thus KM needs to be closely linked to business strategy (Davenport, 1999).

Knowledge Management Maturity Levels

Organisations in the present day business environment are depend on knowledge and its effective management to obtain strategic benefits. In order to evaluate and assess the extent of diffusion of KM activities within the

organisation we need to make use of knowledge management maturity model (KMMM) (Ehms and Langen, 2002). Academia and industry has developed various KM maturity models, weather it is Siemens KMMM or KPMG's Knowledge management benchmarking model. Siemens KMMM defines for 5 maturity levels namely initial (lowest), repeatable, defined, managed and optimised as the highest level attainable. Siemens maturity model is based on the CMM by SEI (Siemens, 2004). KPMG Knowledge Journey defines the 5 level maturity levels as from "knowledge chaotic", "knowledge centric" (KPMG, 2000). Similarly the KM Maturity Model by Infosys defines five levels of maturity. They are level 1 – default where KM is not defined, level 2 is reactive with basic repeatability, third level is aware – where in KM is applied but limitedly. The fourth level is convinced i.e. starting obtaining benefits form KM and final level is sharing where KM is way of conducting business (Infosys, 2000; Kochikar, 2000).

Knowledge management maturity levels can be defined in 5 levels ranging from Level 0 - Non Existent, to Level 5 – Optimised. Organisations are considered to be at level 0 or nonexistent when there is complete absence of any activities remotely associated with knowledge management; there is no understanding of KM phenomenon and organisations are totally unaware of KM. Level 1 is initial/ad-hoc level, the organisation starts to think about knowledge management though it is at its very nascent stage, organisation tries to make sense of KM. As we move atop the level to level 2 – repeatable but intuitive, it is seen there are pockets of individuals employing KM although they lack standardised processes, framework and KM training. Level 3 – defined process marks the arrival of KM organisation wide with procedures being standardised and implementation of at least 1 KM initiative. Next level 4 is the managed and measurable level – where all the KM activities are formalised, well defined, processes and outcomes can be measured, evaluated and improved. KM is being accepted organisation wide. Level 5 is the highest level attainable, it is the optimised level, this is categorised by well defined and fully implemented KM and processes are at best practice level. It can be said KM is way to do the daily grind (Grundstein, 2008; APQC, 2003; Gold et al, 2001; Hseih et al, 2009).

RESEARCH DESIGN

This research paper investigates the relationship between patterns of KM maturity, KM obstacles and outcomes in strategies to leverage organizational knowledge. This research was directed to Chief Knowledge Officers or Chief Executive Officers, Directors of HR and Chief Information Officers of public and private companies, and government and semi-government organizations, and was conducted as an anonymous web-based survey. Data was collected by survey, several questions from the survey are qualitatively analysed using the textual responses provided by the survey respondents. The survey responses are analysed using thematic analysis to generate themes and to group the responses. This helped the researchers obtain a greater understanding of challenges and obstacles to knowledge management. The data was collected using subscription KM list-servs and discussion forums. The online survey was prefaced by an explanatory statement. Due to the email method of subject recruitment this sample cannot be said to be representative of all organizations or of the opinion of all KM practitioners and does not represent the population (Dillman, 2000).

Sampling issues are the same for internet and paper based surveys although with the internet it is more difficult to verify (Jansen et al., 2007). There is a legitimate problem in the use of volunteers from the internet. Validity is found through comparison of similar surveys that have been validated before. Non-response bias is countered by researcher in that the estimate of the response rate from the 9 discussion groups gives a total population pool of 5500. However it must be strongly stressed that the experience of the researchers also indicates that there is very large overlap of memberships between discussion groups. Many members' email addresses regularly appear in postings on up to three groups on a weekly basis. The above concerns also suggest that the overlap may be in the order of up to 25% with a total sample size being closer to 4125. This being the case then the response of 218 individuals may equate to 5.3%. This is acknowledged, as a low response rate though the average response rate for an unsolicited survey with no personalisation of address and no follow up is 5% (Dillman, 2000). Respondents were distributed across 34 countries, and from every continent.

It can be reasonably argued that the sample "is a microcosm of the [KM] population" (Bryman & Bell., 2007, p. 731) and therefore, both representative of the selected population, and informed respondents, and that this data indicates trends within this population to provide insights and understanding of current global approaches to KM.

The survey instrument comprises 22 multiple choice questions and 3 questions that requested a text based response. Of these 13 multiple choice questions collect organizational data, and 9 multiple choice questions collect demographic data. Participants were offered the opportunity to be informed of the aggregate results of this research data. The questionnaire was timed to take approximately 12 minutes to complete. To-date the results have been analysed using SPSS 16.0 for Windows. The survey sections comprised knowledge management definitions, the management of knowledge as an asset, cultural aspects of knowledge management, knowledge use in the future and obstacles to its management, structural mechanisms that support the

development and implementation of KM strategies and demographic information - both organizational and individual. Constructs were developed through earlier surveys (DeTienne, Dyer, Hoopes, & Harris, 2004; Hackett, 2000; Zyngier, 2008; Zyngier, Burstein, & Rodriguez, 2003) and case study research (Zyngier, 2008; Zyngier, Burstein, & McKay, 2006).

The respondents were required in some questions to tick appropriate responses using attitude questions in the questionnaire. This allowed ranking of agreement to a statement relative to positive and negative endpoints of a five- point Likert scale. Analysis takes account of the possibility of the acquiescent response set where the respondent may develop a pattern of agreeing with all the items. Some provision in the survey instrument for text based response data exhibited broad openness of opinions. This openness – and in some cases blunt honesty - provides additional richness for analysis. It is both the statistical and the text based data collected that are the substantial analytic focus of this paper.

DISCUSSION OF SURVEY FINDINGS

The textual responses given by the survey respondents were analysed and categorised based on the underlying themes, these comments and remarks were analysed for thematic content qualitatively. The comments and remarks are categorised according to the identified themes. The thematic analysis revealed three leading and mostly persistent challenges faced by an organisation towards any KM implementation. The second part of the survey deals with the strategic benefits obtained from KM as well as provides an insight in the current stage of the KM initiative within the organisation. Respondents from 34 countries across all the continents indicate the pervasiveness of the KM activities in the present day business operations. KM is truly a widely practiced business activity and a global phenomenon. The survey respondents also indicated the maturity level of their KM strategies.

KM Maturity

The maturity level of the KM strategy indicates the current state of the KM in the organisation. Academia and industry has created various KM maturity models and are widely used as well (Klimko, 2001). Findings are compared to the Knowledge Management Maturity Model (KMMM) developed at Siemens (Ehms & Langen, 2002). Respondent organisations in the sample are categorized according the five KMMM levels.

As can be seen in Figure 1 below the level of maturity at the defined, managed and optimizing levels of KM varies (Ehms & Langen, 2002). Overall 62% of our organizations have moved beyond the exploration stage: 22.5% have implemented several KM initiatives equivalent to the managed level of KM maturity; 13% have KM operating organization wide equivalent to the managed level of maturity; and 14% of organizations claim to include KM in their organization's strategic planning which is equivalent to the optimizing level of KM maturity.
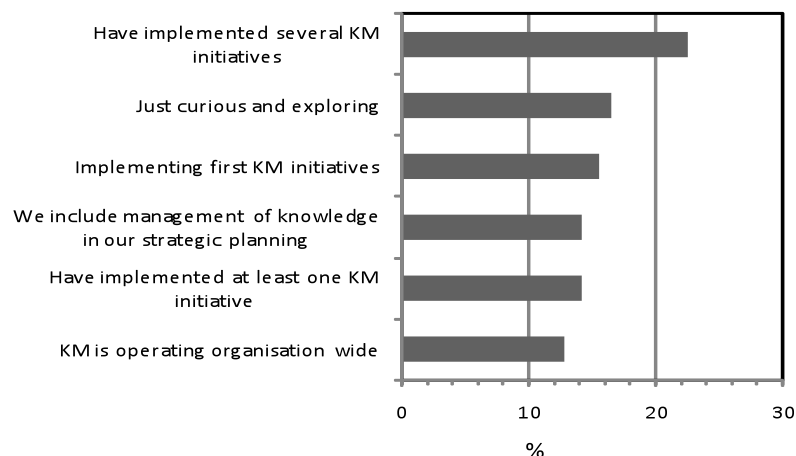

Figure 3 Maturity of KM strategy across sample

Obstacles to KM

The survey participants were asked to provide written comments about challenges and strategic benefits realised through KM. Off the total 218 survey participants 111 (50.9 %) survey respondents provided remarks and comments. The thematic analysis of these responses resulted in few themes occurring more often than others do. The primary challenges and obstacles related to KM as identified here, relate to the understanding of philosophy

behind KM and to continuing issues of organizational culture. These two challenges are closely followed by commitment of people to the KM cause; and having established KM frameworks.

As can be seen in the Figure 2 below, of those who provided remarks and comments, nearly 27% percent pointed towards the lack of or minimal understanding of what knowledge management is and the potential benefits that can be attained by implementing KM. The comments also indicated that organisations yet do not perceive the business value of the KM initiatives. The respondents often referred to lack of value perception of knowledge and KM in the day to day activities i.e. the employees or the organisation have no or limited understanding of the potential benefits KM can bring on to the table and they clearly lacked in realising the business value of knowledge. These thoughts are echoed uniformly throughout the responses
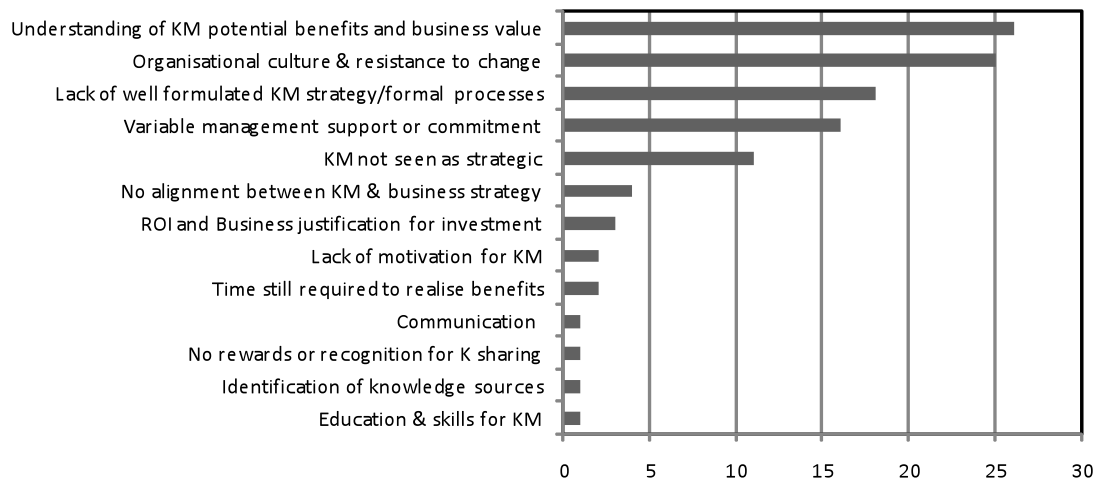

Figure 4 Issues in and obstacles to effective KM

One respondent wrote, "*Getting employees to think about KM is tough. KM is understood has secondary work and no one wants to think about secondary. Everyone wants to think about primary*" (respondent). Absence of clear definition of knowledge and lack of understanding about KM and its business value is clearly reflected here. Organisations and employees as a whole suffer from lack of these two. These are by far the biggest obstacle faced by the organisations in the present business environment; that if KM practitioners can improve the employees and the organisations understanding of the philosophy behind KM then they will be able to lead and deliver successful KM programmes. Then they would be able to drive home strategic benefits and advantage over those firms without KM initiatives implemented.

Organisation culture, also sometimes referred as work culture, comes close to being the biggest obstacle faced; 25% of survey respondents describe organisational culture as the most daunting challenges faced in any KM implementation. Upon further investigation and analysis it is found that organisational culture encompasses more persistent factors posing obstacles and challenges to KM such as resistance to change, knowledge hoarding, lack of collaboration and coordination and minimal sharing. They pose great challenge to any KM initiative. A respondent advised that "*Progression is at least partially based on each individual's realization that we are all 'connected' and progress is best realized when information flows freely*" (respondent). This further echoes the fact that employees still think that by sharing what their knowledge they might become dispensable. Knowledge hoarding is wrongfully related to false sense of being in power, which needs to be changed to deliver successful KM. It wouldn't be wrong to draw a relation between these two obstacles to KM, as both can be overcome by either promoting a knowledge sharing culture or by making employees at large realise the value of knowledge and benefits it can bring on. A suggested reason for this was "*the lack of a focused management team; the lack of qualified middle management; the lack of coherent reporting systems; the lack of a coordinated business strategy across the firm. All of them [sic] are hopefully changing soon*" (respondent). On the contrary, the organisations that already have some form of KM practices in place, whether in silos or nascent stages, reflected in their comments that lack of well formulated knowledge strategy and well documented procedures poses as a challenge for the KM. Nearly 16% of the respondents pointed towards this factor as a major contributing factor to KM challenges. Equally, respondents also commented that top management support and commitment to cause is another big challenge and that "*senior leadership "buy in" to KM is essential*" (respondent). This same issue was reflected in approximately 14 % respondent's comments.

One tenth of the respondents believed that if KM initiatives are not given strategic importance; organisations will not be able to derive any benefits. An example given was that "*there is a serious lack of understanding of*

the risk we are exposed to by failing to manage our knowledge at the highest level. This results in a failure to engage effectively in cohesive KM strategy" (respondent). Furthermore, it reflects that for any KM initiative to be successful it needs to aligned strategically with the business strategy and ought to be given a seat at the strategic level. It's imperative that if a KM initiative is linked to strategic benefits and objectives of the organisations and considered strategically important organisations will be able to deliver more successful projects. Fewer than 5% of the respondents ranked the following as the obstacles to any KM initiative, Business case justification including return on investments, time required to realise the potential benefits and how to measure the benefits. Some of the responses indicated towards shortage of skills (< 1%), identification of sources of knowledge (< 2%), rewards and recognition for KM efforts and knowledge sharing (< 1%) and lack of motivation towards KM (< 2%) and communication (< 1%) as challenges and obstacles faced towards any KM initiative. The themes are unswerving with the literature review.

Strategic Benefits realised

Of the 218 survey participants 93 survey respondents provided their comments about the strategic benefits realised as a result of their KM initiative. The organisations indicate that they have been able to drive home the benefits and have benefitted from the KM initiative. Although majority of firms enjoyed implementing KM and have perceived value, they do not have formal ways of measuring the impact of KM. This has been the most common theme all across the survey respondents as represented by 20% of respondents. Increased savings in cost and increasing profits, and effective and widespread reuse of knowledge comes at close second as this is reflected in nearly 17 % of respondents each. They (the organisations) perceive value in KM but do not know how to measure it. Some of the survey responses also suggest that organisations are able to modify and improve their business processes and able to increase the effectiveness and efficiency of the processes and results in increase productivity and it also fosters creativity; 13% of the survey respondents reported improvements in processes as an outcome of KM initiative. These themes are presented graphically in the form of a pie chart below in the Figure 3.
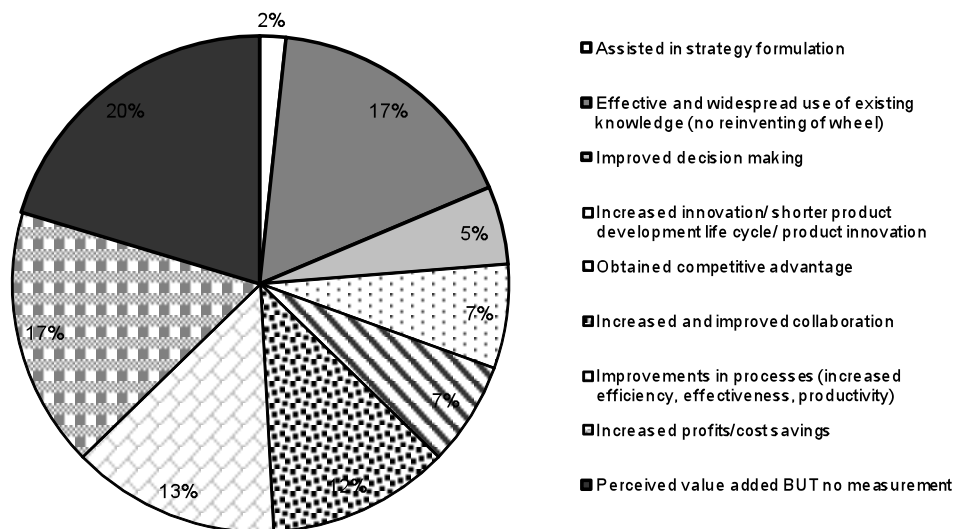

Figure 5 Strategic benefits realized

Almost 12% of the survey respondents attribute a collaborative way of working to KM; it not only improved collaboration but also improved cooperation. It can be further deduce that, these 12 % respondents attribute increasing collaborative work culture to KM. In a lengthy response a respondent advised multiple benefits including: "*Strategy has resulted in saving the company millions of dollars, delivered new products and services to our clients, even shaped some of our new client measures of satisfaction that indicates an increasing value in our relationships with our clients. Further work is on-going to develop our relationships with our partners. Additional work [is] underway to directly impact several initiatives [that are] underway to facilitate our company's strategic plans that include values and behavioural changes along with financial measure*" (Respondent). Some of the respondents attributed improved decision-making capability (5 %), shorter product development lifecycle as well as increased innovation in both product and process (7 %) and obtaining competitive advantage (2 %) as a direct result of having a sound KM in place.

KM maturity level and obstacles faced

The graph in Figure 4 below shows the varying magnitude of obstacles faced by organisations at different levels of maturity, from the graph it is clear that when organisations implement a large number of KM initiatives they face largest number of challenges which can be attributed to various factors. This can form the basis of further research in this area. By further drilling down into initial findings in KM maturity presented in Figure 1 above, we add granularity to understanding that proportional difficulties and obstacles continue to be faced at every stage of KM development and implementation.

Figure 6 Comparison of maturity with obstacles recorded against maturity levels

The greatest level of obstacle is concurrent with a middle level of KM maturity. This indicates that as a KM strategy is pushed out across organizations that the level of difficulty does not decrease but is on the contrary at its highest. We also note that the proportional decrease when KM is operating organization wide and is finally incorporated into strategic planning. Thus, it is difficult to say that is there any form of relationship between the maturity level and obstacles faced. This can further be linked to strategic benefits i.e. when KM is incorporated into strategic planning; organisations tend to obtain high strategic benefits from the KM initiative. The analysis substantiates that there is a continuing relationship in between the current stage of KM and the obstacles faced by the organisations. Where as on the other hand there exists a positive relationship between the strategic benefits realised and maturity level of the KM within the organisation. As the maturity level increases so does the realisation of strategic benefits also increases.

DISCUSSION AND CONCLUSIONS

The analysis and evaluation of the survey results are consistent with the relevant literature review. The research findings indicate that lack of understanding of KM, potential benefits and its business value are the biggest challenges faced by any organisation today, closely followed by organizational culture and resistance to change and support from management. On the other hand, as the KM initiative is aligned with the business objectives and goals, the organisations tends to attains more benefits in addition to benefits such as cost savings, increased efficiency and effectiveness in processes, reuse of knowledge, increased innovation and improved decision making.

The survey results and the thematic analysis points to the phenomenon that the more strategically aligned and strategically important the KM initiative is, the more mature and successful it is. Upon analysing the obstacles and strategic benefits obtained this conclusion holds true. This can be further elaborated as the more mature the KM initiative and closely aligned with business strategy, the benefits realized are strategic in nature and KM fulfils its intended purpose. There is positive relationship between the maturity level of the KM initiative and strategic benefits realized; with increasing maturity one can expect increasing strategic benefit realization. On the contrary, the maturity level of KM initiative in the organisation does not show any relationship with the challenges and obstacles faced by the organisation. It is interesting to note that at highest level of KM maturity the organisation faces largest numbers of challenges and obstacles to KM. This contradicts with the common notion that with increasing maturity level the challenges and obstacles faced are ought to be reduced. The major obstacles reported in Figure 2 above continue to echo earlier research: KM was not being seen as strategic; variable management support or commitment lack of well formulated KM strategy/formal processes; organisational culture and resistance to change; and an understanding of KM potential benefits and business value. These can all be considered as dependant on time and on the understanding that a strategic initiative requires both time and resources committed in order to realise benefits effectively.

The key lesson here for both KM researchers and practitioners is to understand that increasing levels of KM maturity does not guarantee reduced number of challenges rather it may be the opposite. At the highest level of KM maturity in the survey sample, the organisation faced largest number of challenges. When these challenges can be predicted, practitioners can find motivation in their endeavours that as the strategy matures, resolution is ahead. A plausible argument can be put that the further a KM strategy is pushed through the organisation, then the greater will be the understanding of that strategy. Additional analysis and correlation of the data collected in this survey is the source of further research. The survey findings can lay the foundation for further research in KM maturity level and relationship to challenges and obstacles faced and strategic benefits realized.

REFERENCES

Alavi, M., and Leidner, D.E. (1999), "Knowledge Management Systems: Issues, Challenges and Benefits" *Communications of Association of Information System, Vol. 1, Art. 7*

American Productivity and Quality Centre (1999), "APQC *Benchmarking Study"*, American Productivity and Quality Centre, Houston, TX.

American Productivity and Quality Centre, (2003), Road map to knowledge management results: Stages of implementation, (<http://www.apqc.org>)

Beckman, T. (1997), "A Methodology for Knowledge Management", *International Association of Science and Technology for Development AI and Soft Computing Conference: Banff, Alberta, Canada*.

Binney, D, (2001), "The knowledge management spectrum- understanding the KM landscape", *Journal of Knowledge Management, Vol. 5, No. 1*, p. 33-42

Bryman, A., & Bell., E. (2007). *Business research methods* Oxford: Oxford University Press.

Davenport, T.H. , Long D.W.D. and Beers M.C, (1998), *"*Successful Knowledge Management Projects", *Sloan Management Review, Vol. 39, Is. 2,* pg. 43.

Davenport, T.H. (1999), *Knowledge Management and Broader Firm: Strategy Advantage and Performance*,

In J. Liebowitz (Ed.), Knowledge Management Handbook (pp. 2-1 2-11). Boca Raton: CRC Press.

Davenport, T.H and Prusak, L. (2000), "*Working Knowledge: How Organisations Manage What they Know"*, Boston: Harvard Business School Press.

DeTienne, Dr. K.B et al, (2004), "Toward a Model of Effective Knowledge Management and Directions for Future Research: Culture, Leadership and CKO's", *Journal of Leadership and Organisational Studies, Vol. 10, No. 4*, pp. 26-43

Drucker, P.F, (1992), "*The Age of Discontinuity: Guidelines to Our Changing Society"*, Transaction Publishers, New Brunswick, London.

Ehms, K and Langen, M. Dr, (2002), *Holistic Development of Knowledge Management with KMMM*, Siemens AG/ Corporate Technology, Knowledge Management and Business Transformation, Siemens AG. Retrieved 8 November, 2009, from
http://www.providersedge.com/docs/km_articles/Holistic_Development_of_KM_with_KMMM.pdf

Gold, A.H., Malhotra, A. and Segars, A.H., (2001), Knowledge Management: An Organisational Perspective, *Journal of Management Information System, Vol. 18*, No. 1, pp. 185-214

Grey, D, (1996), *What is Knowledge Management?,* The Knowledge Management Forum
http://www.km.forum.org/what_is.htm

Grant, R. M. (1996), "Toward a Knowledge-Based Theory of the Firm", *Strategic Management Journal, 17(Winter Special Issue)*, 109-133.

Grundsteirn, M, (2008), *Assessing Enterprise's Knowledge Management Maturity Level*, The Open Knowledge Society, 1st World Summit on Knowledge Society, Communication in Computer and Information Science, Vol. 19, pp. 380-387.

Hackett, B. (2000), "Beyond Knowledge Management: New Ways to Work and Learn" *(Research Report No. 1261-00-RR). New York: The Conference Board.*

Hsieh,P.H. et al, (2009), The construction and application of knowledge navigator model (KNM): An evaluation of knowledge management maturity, *Expert Systems with Applications, Vol. 36, Issue 2, Part 2*, Pg. 4087-4100

Jansen, K. J., Corley, K. G., & Jansen, B. J. (2007). E-Survey Methodology. In R. Reynolds, R. Woods & J. Baker (Eds.), *Handbook of Research on Electronic Surveys and Measurements* (pp. 416-425). Hershey: Idea Group Reference.

Infosys, (2000), KM maturity model, <http://www.infosys.com>

Kalkan, V.D, (2008), "An overall view of knowledge management challenges for global business", *Business Process Management Journal, Vol.14, No. 3*, pp. 390-400

Klimko, G, (2001), *Knowledge Management and Maturity Models: Building Common Understanding*, 2nd European Conference on Knowledge Management, Bled School of Management, Bled, Slovenia.

Knapp, E (1998), Information Management and Knowledge Management, pg 62, in McElroy, M and Firestone, J.M, (2003), Key Issues in New Knowledge Management, Butterworth-Heinemann,

Kochikar, V.P, (2000.), *The Knowledge Management Maturity Model – A Staged Framework for Leveraging Knowledge*, KM World 2000, Infosys Technologies Limited
http://studies.hec.fr/object/SEC/file/A/QLQENKJYPCTJLEYVBNSNVZXYZKPKGGGU/Knowledge%20Management%20Maturity%20Model.pdf

KPMG Consulting, (2000), *Knowledge management research report 2000*, <http://www.kpmg.co.uk>

Long, D. W. D., & Fahey, L. (2000), "Diagnosing cultural barriers to knowledge management", *The Academy of Management Executive, Vol. 14, No. 4,* pp. 113-127.

Lopez, S.P., Peon, J.M.M, Jose, C and Ordas, V, (2004), Managing Knowledge: Link between culture and Organisation Learning, *Journal Of Knowledge Management, Vol. 8, No. 6*, pp. 93-104.

Milne, P. (2007), "*Motivation*, incentives and organisational culture", *Journal of Knowledge Management, Vol. 11, No. 6,* pp. 28-38

Malhotra, Y.(2001), *Knowledge Management and Business Model Innovation*, IDEA Group Publishing, IBT Global, ChVII.

Murray, P.C. (1998), "New Language for New Leverage: The Terminology of Knowledge Management", *Corporate Education, Biz, LLC, NY*.

North, K and Hornung, T (2003), "The Benefits of Knowledge Management", *Journal of Universal Computer Science, Vol. 9, No. 3*, pp. 463-471

O'Dell, C. and Grayson, C.J. (1998), *"*If only we knew what we know: identification and transfer of internal best practices", *California Management Review, Vol. 40 No. 3*, pp. 154-74.

Owens, R.G. and Steinhoff, C.R. (2007), "Towards a Theory of Organisational Culture", *Journal of Educational Administration, Vol. 23, No, 3*, pp. 6-16

Politis, J.D. (2003), "The connection between trust and knowledge management: what are its implications for team performance", *Journal of Knowledge Management, Vol. 7, No. 5,* pp. 55-66.

Ribiere, V.M. and Sitar, A.S. (2003), "Critical role of leadership in nurturing a knowledge-supporting culture", *Knowledge Management Research & Practice, Vol. 1,* pp. 39-48

Spender, J. C. (1996), "Making Knowledge the Basis of a Dynamic Theory of the Firm", *Strategic Management Journal, 17((Winter Special Issue) 45)*.

Siemens, (2004), *Knowledge management maturity model (KMMM)*, <www.w4.siemens.de/ct/en/technologies/ic/beispiele/kmmm.html>

Wiig, K. (1993), "*Knowledge Management Foundation",* Schema Press*.

Wiig, K. (1997), "Knowledge management: an introduction and perspective", *Journal of Knowledge Management, Vol. 1 No. 1,* pp. 6-14.

Zack, M.H. (1999), "Developing a knowledge strategy", *California Management Review, Vol. 41No. 3*, pp. 125-45.

Zack, M.H. (1999a), "Managing Codified Knowledge", *Sloan Management Review, Vol. 40, No. 4*, pp. 45-58

Zyngier, S. (2008), "Risk management: Strengthening Knowledge Management", *International Journal of Knowledge Management, 4(3)*.

Zyngier, S., Burstein, F., & McKay, J. (2006), The Role of Knowledge Management Governance in the Implementation of Strategy", *Paper presented at the 39th. Hawaiian International Conference on System Sciences (HICSS39), Hawaii*.

Zyngier, S., Burstein, F., & Rodriguez, M.-L. (2003), Knowledge Management Strategies in Australia", *In H. Hasan & M. Handzic (Eds.), Australian Studies in Knowledge Management. Woolongong: University of Wollongong Press*.

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