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The Knowledge Management Imperative

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ABSTRACT

Retention of expertise of key personnel and improved interaction between technology, people and processes continue to drive investments in Knowledge Management (KM) initiatives. Since seventy percent of employees' knowledge is tacit knowledge that is stored in long-term memory, it is imperative that organizations nurture its knowledge resources and activities. As organizations continue to be challenged by the dynamic nature of the competitive global marketplace, the necessity to outsource critical knowledge tasks, and manage rapid turnover of key personnel, it has become imperative that managers implement KM practices. An effective KM application for preserving knowledge within the firm is presented.

INTRODUCTION

The recognition of the KM imperative will provide an impetus for organizations to understand and nurture their knowledge resources and activities. The current economic conditions have made companies realize the value of their corporate knowledge and seek effective methods to reuse that knowledge. Since seventy percent of organizational knowledge is in the minds of employees (known as "tacit" knowledge) while just 30 percent is in externalized forms (known as "explicit" knowledge), it has become very important to harvest and document employees' long-term memory. Therefore, the creation of a knowledge reserve is a necessity for capturing innovative ideas by individuals as well as groups, while interpreting, congealing, and repackaging the collective conclusions into organizational knowledge. We review several environmental factors that have made KM essential today and provide some guidance about building a knowledge reserve, after a short review about the KM concept.

KNOWLEDGE MANAGEMENT CONCEPT

Knowledge Management has assumed a broad range of meanings from its inception; however, most of the published material remains ambiguous and provides little empirical evidence to support a specific definition for the knowledge management concept. KM has been acknowledged as being important to competitive advantage and organizational survival; thus, a clear understanding and agreement about KM should prove to be of great value for organizations. As organizations strive to create a competitive advantage with their products and services, they continue to contemplate the KM concept and the impact on organizational success.

In an effort to define KM in business objectives, organizations must determine which corporate knowledge should be harvested, organized, managed and shared. A general definition of KM has been 'getting the right information to the right people at the right time' in order for them to make better decisions. KM uses "systematic approaches to help

information and knowledge flow to the right people at the right times so they can act more efficiently and effectively. It is about creating a corporate culture that learns from experience, so if mistakes do happen, they will never be repeated" (Barth, 2001). The fundamental reasons for adopting KM have not disappeared. Retention of expertise of key personnel and improved interaction between technology, people and processes continue to drive investments in a variety of software and services to support KM initiatives (Dusseldorp, 2003). These initiatives use knowledge skills in performing knowledge activities that operate on the organization's knowledge resources to achieve organizational learning and projection, which is elicited by knowledge requirements. Therefore, the KM concept is concerned with locating or creating useful knowledge and transmitting it throughout the organization.

As the concept is developed, the primary objective is to add value for customers through the acquisition, creation, sharing and re-use of any aspect of knowledge relevant to the organization and its internal and external environment. An organization's ability to manage knowledge may be the only remaining source of competitive advantage (Koch, 2002; Dzikowski, 2001); consequently, one goal of the organization is to identify, capture, and leverage knowledge to help the company compete (Martin, 2000). The ability to manage and effectively use knowledge to develop new products and services or make important changes in the business decisions will continue to be viewed as a competitive advantage, while clearly demonstrating the value of KM systems within the organization. Only by developing learning organizations that use the knowledge they acquire can organizations continue to adapt and respond to their changing environment (Buhler, 2002)

THE ENVIRONMENT

In today's hyper-competitive business environment, one of the crucial challenges facing organizations is retaining the corporate knowledge. A changing environment necessitates a change in strategic initiatives; such as mergers and acquisitions, new product and market strategy, joint ventures, strategic alliances, diversification and outsourcing (Som, 2003). Organizations continue to be challenged by the dynamic nature of outsourcing critical knowledge tasks, aging workforce, business continuity planning, business process reengineering, and the rise of the free agent; i.e., the revolving door, (defined as employees with short term commitment to the company). "In the coming years, after the economy inevitably rebounds and layoffs subside, the rate at which people leave their organizations - and take their knowledge and experience with them - is going to increase" (Carey, 2003). "KM must be approached as a way of doing business, one enabled by properly-used technology. The challenge is to inspire enterprises to make the workflow and process changes critical to KM success and to invest in KM at a time when budgets remain tight" (Angus, 2003).

Personnel Turnover and Outsourcing

Organizations are perpetuating the revolving door by leasing temporary services, eliminating rungs on the proverbial organizational ladder, and outsourcing knowledge jobs. The rise of the free agent is a direct result of the revolving door. Employees are no longer making long term commitments to companies and companies are no longer making long term commitments to employees as evidenced by outsourcing internal jobs. Companies like Accenture are thriving as they become the outsourcing agent for various organizations. Organizations are now sourcing their technological knowledge externally and they are aligning their sourcing activities to the strategies associated with developing current and future capabilities.

In areas, such as Asia, where the credit card industries are in their infancy, expertise in everything from account acquisition to collections is in short supply. Businesses in emerging markets are opting for a so-called knowledge-transfer team that helps foreign card industries develop the needed credit card skill sets (Credit Card Management, 2003).

According to a study with 150 business-technology professionals, 32% of businesses outsource some or all of their human-resource functions, followed by logistics/supply chain, CRM, procurement, inventory management, and financial operations, including accounting. In addition, 82% of respondents cited cost savings as a motivating factor to outsource (Stein, 2003). The concept of the revolving door continues to create risk for companies as they continue to lose their valuable corporate knowledge. Organizations must capture the knowledge of experts and business processes before terminating the relationship with an employee or restructuring the organizational processes.

Business Process Reengineering

"In a rush to dramatically compress product development cycle times, improve market responsiveness, and redefine customer-focused operations and service quality, many companies have turned increasingly to redesigning – "reengineering"—operational business processes", (Short and Venkatraman, 1992, p. 7). It is important to recognize the structure of the organization and how it will be impacted when considering BPR. Business process reengineering (BPR) is the radical redesign of a business process to gain dramatic improvements in performance measures such as cost, quality, service, and speed, (Alavi and Youngjin, 1995).

KM supports the concept of accessing, creating and sharing knowledge via BPR and leveraging that knowledge for a competitive advantage. "KM is a holistic cluster of sustainable, proactive, conscious, and comprehensive organizational and business activities that encompass enterprise-wide processes, techniques, and professional practices and interactions" (Frey, 2003). Companies have begun capturing implicit knowledge about business operations and have built that knowledge into their data; thus, sharing the knowledge in a formal way. As organizations continue to downsize and right size; while restructuring the business processes, it is important to implement KM business processes and structured methodologies to acquire the expertise of the organization.

Aging Work Force

"US defense agencies and aerospace companies are launching knowledge management programs in an effort to mitigate what some are calling a national disaster - the tremendous loss of expertise caused by a decade of budget cuts, downsizing and an aging workforce. While the US aircraft segment has been somewhat shielded from the impact of experience and skill losses, the space launch industry and nuclear weapons infrastructure have suffered markedly"(Scott, 2000). To mitigate this type of problem in any industry, some forward-thinking organizations have implemented KM programs to promote continuous knowledge transfer between co-workers in order to maintain productivity, regardless of the rate of employee turnover.

In 2002, approximately 3.3 million people lost their jobs. In addition, hundreds of "baby boomers" that are highly skilled workers; i.e., scientists, engineers, etc., are scheduled to retire in the next few years, which creates the impending "brain drain" of the organization. These knowledge workers will depart the company and will take their (inaccessible) knowledge with them.

The U.S. Bureau of Labor Statistics notes that 19 percent of baby boomers holding executive, administrative, and managerial positions are expected to retire in just the next five years, and the number of boomers who become eligible for retirement will remain steady-at 12,480 per day—from 2010 until the mid-2020s. And believe it or not, the public sector has a more immediate crisis: By 2005, more than half of the 1.8 million U.S. federal government employees will be eligible for retirement, including 71 percent of those within the senior executive ranks (Carey, 2003).

Organizations must conduct risk assessment and develop a plan for business continuity following the loss of knowledge workers. Therefore, one component of the plan should include developing methods to capture knowledge and make it accessible to ensure that information is available for the business to meet its stated goals. Companies must update their traditional disaster recovery plans to include the loss of employees. As previously noted, the loss could not only occur from downsizing, outsourcing or retirement; but also could be a result of a terrorist attack, resulting in a tremendous loss of human capital.

Business Continuity Planning

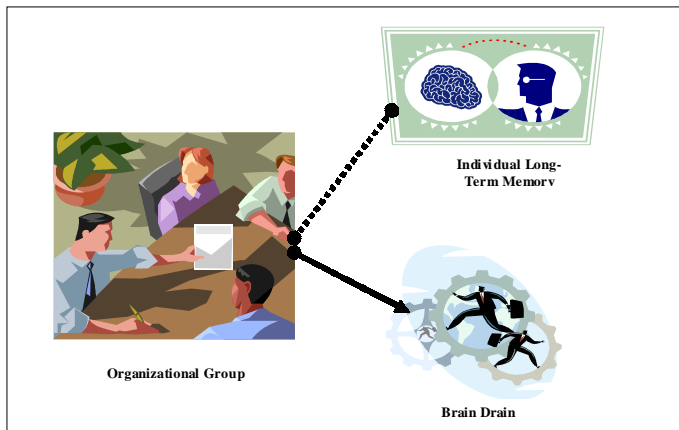
In the last ten years, a major disaster has been reported somewhere in the world, every year. These disasters have made companies reevaluate their traditional disaster recovery plans to include a knowledge management component; hence, a human dimension in addition to the technical one. While the total cost of damage to a company's equipment and facilities can easily be determined, intangible damage, such as the cost of downtime and the loss of intellectual capital are difficult to measure. Not only are companies faced with the potential loss of employees and potential loss of the business infrastructure, but also they are struggling with the rebuilding efforts due to a possible lack of available company employees that can implement the plan. For example, any country that requires the services of reserve and National Guard armed forces, there is a strong likelihood that these members may have their jobs interrupted with little warning. Whenever this happens, these personnel take organizational knowledge to areas where they are often incommunicado for indefinite periods. In addition, there is no degree of certainty of their eventual return. This potential situation provides motivation to capture their critical knowledge.

An important part of the recovery planning should be on the KM aspects that enable the systems to function. "Every company has to take stock of exactly how they do business...it is the emphasis on the people, and the dependency on them, and how they chose to operate" (Scannell, 2001). Therefore, it is a necessity to capture relevant knowledge that can be engaged during catastrophic disasters.

An organization's knowledge base and continuity plan needs to contain relevant (expert) knowledge that can be made available during a disaster. Peter Drucker (1993) stated in his book *Post Capitalist Society*, "The basic economic resource is no longer capital, nor natural resources. It is and will be knowledge." Managers are trying to understand what this means as they move their companies and information technology departments from strategies of data management, to information management, to knowledge management. Organizations are now striving to establish knowledge management systems to assist in the dynamic business environment (McManus & Snyder, 2003).

One measure that managers need to address is that of harvesting the crucial knowledge of their best performers and preserving it. This should be a priority undertaking, as it may prove vital for survival in an era where terrorism poses new risks. As companies prepare their disaster

Figure 1. Knowledge Reserve



recovery plans, they must harvest the knowledge and have it packaged so that the essence of the expert's implicit knowledge is preserved. Risk is inherent in any organization, in any operation, in any situation where the goal is continuity. Since managers are interested in capturing relevant knowledge about the key processes of their firms, it is now apparent that this should be part of the strategic goals of the company (Snyder, Wilson, & McManus, 2000).

BUILDING A KNOWLEDGE RESERVE

Human long-term memory is undocumented, and does not become an organizational asset until after it is harvested and crafted into a knowledge asset. It is important to separate people and things, because this allows us to deliberately institutionalize processes for managing corporate memory.

Human beings come into the world equipped with reflexes and sensory capabilities. Motor capabilities are very limited and immature. The nervous system is not yet "hard wired," as the myelin sheath that makes it work smoothly does not yet cover the peripheral nerves. Humans use their reflexes and limited motor capabilities to act on the environment. They use their sensory capabilities to take in information about the environment, and the results of their actions. By using their short-term memory, they learn to modify their immediate actions. Childhood growth and development promote the building of complex neural and biochemical networks inside the brain that categorize, link, and selectively store short-term memories to build long-term memory, as illustrated in Figure 1. Adulthood provides a repository of long-term memories and the linkages between stored memories become more complex. Therefore, humans bring knowledge from previous experiences to enable them to learn faster and more economically. To each new situation, adult learners bring the sum total of their life experience (Wilson, 2003).

Individuals bring to an organizational group; two or more individuals who have merged their thoughts, feelings, and actions to achieve a common goal, the sum total of his/her life experience, and if willing to share, makes these experiences available to the group. As long as the composition of the group remains stable over time (no turnover for at least 5-8 years) and relatively small (2-4 people), memory of the group's process knowledge, decisions, actions, and rationales resides in the long-term memory of the individuals (Wilson, 2003)

Difficulty arises when someone leaves the original group (moves on to another job, retires, dies, becomes ill), and is replaced by a new person, as illustrated in Figure 1. When someone leaves the group, he/she takes his/her unique perspective of the group's process knowledge, decisions, actions, and rationales that were stored in his/her long-term memory. If the entire composition of the group turns over, eventually there is no one left who holds in his/her individual long-term memory the process knowledge, decisions, actions, and rationales of the original group; i.e.,

the group's history. The result is "brain drain" for the organization, as individuals with expertise leave the group. To make the newcomers' situation even more difficult, the impact of decisions and actions of the original group may not be felt within the organization until 5-8 years later, when no one is left who remembers these decisions and actions, never mind the rationales. Without a collective long-term memory for the organization, there is no foundation for organizational learning to occur over time. The complex structure of interrelationships that grows within the long-term memory of individuals never occurs. The organization is forced to "re-invent the wheel" as turnover occurs within the group, and group members take their individual long-term memories with them as they leave (McManus, Wilson, & Snyder, 2003)

One example that epitomizes the necessity to capture relevant expert knowledge is the devastating collapse of the World Trade Center in the United States. The total financial loss attributed to the loss of human capital in the World Trade Center attack was estimated to be \$10 billion. It is this loss of human capital—the employees, their knowledge, their contacts, their ways of doing business, and their institutional memory—that will impact these companies for years to come (Brooker, 2002). Therefore, organizations must develop a methodology for transferring the long-term memories of individuals into a long-term memory for the organization, so that these memories can be captured, stored and easily accessed by successive generations of group members.

FUTURE RESEARCH AND LIMITATIONS

Based upon the KM items identified through this research, a more comprehensive theoretical model of KM can be developed. In addition, an empirically-derived theoretical model would enhance the body of knowledge concerning KM. This model would focus on the importance of the items, rather than the extent of implementation within the organization. The measurement instrument that will be developed in the next phase of the study should provide the vehicle to accomplish this research. The results of this research can serve as a planning and/or diagnostic tool for KM academicians and practitioners. The authors aim to create a baseline for future research that can be used to track the evolution of KM within the organization.

CONCLUSION, DISCUSSION AND IMPLICATIONS

Although loss of knowledge is not a new phenomenon, never in history has there been such imperative to deploy proven KM methodologies to capture and preserve organizational know-how. The environmental impetus should be clear to all good managers who face unprecedented challenges of producing positive results in the face of intense global competition, downsizing, outsourcing, interorganizational partnering, rapid turnover of personnel, shorten cycled times, and heightened elements of risk from unconventional sources. Given these and other profound environmental pressures, managers must adequately plan for and implement KM practices that will allow them to effectively operate despite the multifarious influences that threaten the knowledge bases of their businesses. We have provided a compelling case and discussed an effective KM application for preserving knowledge. Ignoring the gravity of this situation may imperil the firm's existence.

REFERENCES

- Alavi, M. and Youngjin, Y. (1995) Productivity gained of BPR: Achieving success where other have failed. *Information Systems Management*. Fall, 1995,43-48.
- Angus, J. (2003) Knowledge managing. *InfoWorld* Vol. 25, Iss. 11; pp. 1-4 pgs, Mar 17.
- Barth, S. (2001) Learning From Mistakes. *Knowledge Management* Vol. 4. Iss. 4, pp. 40.
- Brooker, K. (2002). Starting over. *Fortune*, January.
- Buhler, Patricia. (2002) Building the Learning Organization for the 21st Century: A Necessary Challenge. *SuperVision* Vol. 63. Iss. 12 pp. 20(3).

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- Carey, R. (2003) Fight the brain drain. *Successful Meetings*. Vol. 52, Iss. 2; pp. 31-36, February.
- Credit Card Management.** (2003) Hired help for emerging markets, Vol. 16, Iss. 4; p. 12 July.
- Drucker, P. (1993). *Post-Capitalist Society*. New York: Harper & Collins.
- Dusseldorp, Van. (2002) Knowledge Management Market Steams Ahead. EuropeMedia. pNA.
- Dzinkowski, Ramona. (2001) Removing Boundaries to Learning. *Knowledge Management* Vol. 4. Iss. 5 pp. 20.
- Frey, R. S. (2001) Knowledge management, proposal development, and small businesses. *The Journal of Management Development*, Vol. 20, Iss. 1; p. 38.
- Holsapple, C.W. and Joshi, K.D. (2002) "Knowledge Management: A Three-Fold Framework," *The Information Society*.
- Kirrane, Diane. (1999)"Getting Wise to Knowledge Management," *Association Management* (51:8), 31-39.
- Koch, Hope. (2002) An Investigation of Knowledge Management Within a University IT Group. *Information Resources Management Journal* Vol. 15. Iss. 1 pp. 13-21.
- Martin, Bill. (2000) Knowledge Management Within the Context of Management: An Evolving Relationship. *Singapore Management Review* Vol. 22. Iss. 2 pp. 17-36.
- McManus, D.J. & Snyder, C.A. (2003) Synergy Between Data Warehousing and Knowledge Management: Three Industries Reviewed, *International Journal of Information Technology and Management* (2:1/2), 85-99.
- McManus, D. J. and Snyder, C. A. (2003) Knowledge Management: The Missing Element in Business Continuity Planning. *Knowledge Management: Current Issues and Challenges*, edited by Elayne Coakes; Chapter VII; pp. 79-91.
- McManus, D.J. & Snyder, C.A. (2003) Organization Value of Knowledge Management, *Information Resources Management Association International Conference Proceedings*, May.
- Scott, W. B. (2000) Industry's Loss of Expertise Spurs Counterattack. *Aviation Week & Space Technology*, Vol. 152, Iss. 11; p. 6, March 13.
- Short, J. and Venkatraman, N. Beyond Business Process Redesign: redefining Baxter's Business Network, *Sloan Management Review*. Cambridge, Fall 1992, 7-22.
- Snyder, C. A., Wilson, L.T., & McManus, D.J. (2000) Corporate memory management: A knowledge management process model, *International Journal of Technology Management*, Spring.
- Snyder, C.A., & Wilson, L.T. (1998). The process of knowledge harvesting: The key to knowledgemanagement, *Business Information Management: Adaptive Futures*, 8th Annual BIT Conference, 43.
- Som, A. (2003) Building sustainable organisations through restructuring: The role of organisational character in France and India. *International Journal of Human Resources Development and Management*. Vol. 3, Iss. 1; p. 2.
- Stein, T. (2003) Inside out. *Optimize*, June, p. 91.

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