

TECHNOLOGIES FOR ENABLING KNOWLEDGE MANAGEMENT FOR ORGANIZATIONAL PERFORMANCE

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Abstract

Organizations need technologies to transform the business processes to achieve the value and growth for their business functions. Knowledge Management is one of the tools most appropriate to integrate the technologies with organizations business processes. Many companies and non-profit organizations have resources dedicated to internal Knowledge Management efforts, often as a part of their business strategy, information technology, or human resource management department. Several consulting companies also exist that provide strategy and advice regarding Knowledge Management to these organizations. This paper aims to explain how successful organizations engage in Knowledge Management process by development of various stages include from corporate culture, knowledge dimensions and technologies that facilitate the process. It also tries to explain various technologies used in implementing Knowledge Management in organizations through which value creation for customers and stakeholders can be done. It rationalizes the implementation of Knowledge Management in strategic, managerial and operational elements of a business to achieve the organizational performance. The data is collected from various published and unpublished journals, articles and relevant books on Knowledge Management.

Keywords: business processes, competitive advantage, information technology, Knowledge Management, value creation.

1. INTRODUCTION

Knowledge Management (Knowledge Management) comprise a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizations as processes or practices. Many large companies and non-profit organizations have resources dedicated to internal Knowledge Management efforts, often as a part of their business strategy, information

technology, or human resource management department. Some consulting companies also exist that provide strategy and advice regarding Knowledge Management to these organizations. Knowledge Management efforts typically focus on organizational objectives such as improved presentation, competitive advantage, improvement in business processes, the sharing of lessons learned, integration and continuous improvement to create customer value. Knowledge Management efforts go beyond with organizational learning, and may be eminent from that by a greater focus on the management of knowledge as a strategic asset and a focus on encouraging the sharing of knowledge. Knowledge Sharing remains a challenging issue for Knowledge Management, and while there is no clear agreement barriers may include time issues for knowledge works, the level of trust, lack of effective support technologies and culture (Jennex, 2008).

Knowledge Management is a concept and a term that arose approximately two decades ago quite simply one might say that it means organizing an organization's information and knowledge holistically. It focuses on integration of technologies while making decisions. Very early on in the Knowledge Management movement, Davenport (1994) offered the still widely quoted definition: "Knowledge Management is the process of capturing, distributing, and effectively using knowledge for the end users."

This definition has the virtue of being simple, stark, and to the point. A few years later, the Gartner Group created another second definition of Knowledge Management, which is perhaps the most frequently cited one (Duhon, 1998): "Knowledge Management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers." Both definitions share a very organizational, a very corporate orientation. Knowledge Management, in history at

least, is primarily about managing the knowledge of and in organizations.

The Stages of Development of Knowledge Management

Looking at Knowledge Management from first to last the stages of its development tells us not only about the history of Knowledge Management, but it also signify a great deal about what constitutes Knowledge Management.

Information Technology

The initial stage of Knowledge Management was driven primarily by information technology. The concept of intellectual capital provided the reason and the frame, the seed, and the availability of the internet provided the tool. As described above, the consulting community jumped at the new capabilities provided by the Internet, using it first for them, realizing that if they shared knowledge across their organization more effectively, then they could avoid reinventing the wheel, underbid their competitors, and makes more profit. The first use of the term Knowledge Management in the new context appears to have been at McKinsey. They realized quickly that they had a compelling new product. Ernst and Young organized the first consultation on Knowledge Management in 1992 in Boston (Prusak, 1999).

Human resources and Corporate Culture

The second stage of Knowledge Management emerged when it became apparent that simply deploying new technology was not sufficient to effectively enable information and knowledge sharing. Human and cultural dimensions needed to be addressed. The second stage might be described as the “‘If you build it they will come’ is a fallacy” stage—the recognition that “‘If you build it they will come’” is a recipe that can easily lead to quick and embarrassing failure if human factors are not sufficiently taken into account. It became clear that knowledge management implementation would involve changes in the corporate culture, in many cases rather significant changes. As this recognition outspread, two major themes from the business literature were brought into the Knowledge management fold. The first was Senge’s work on the learning organization (Senge, Peter M., 1990 *The Fifth Discipline: The Art and Practice of the*

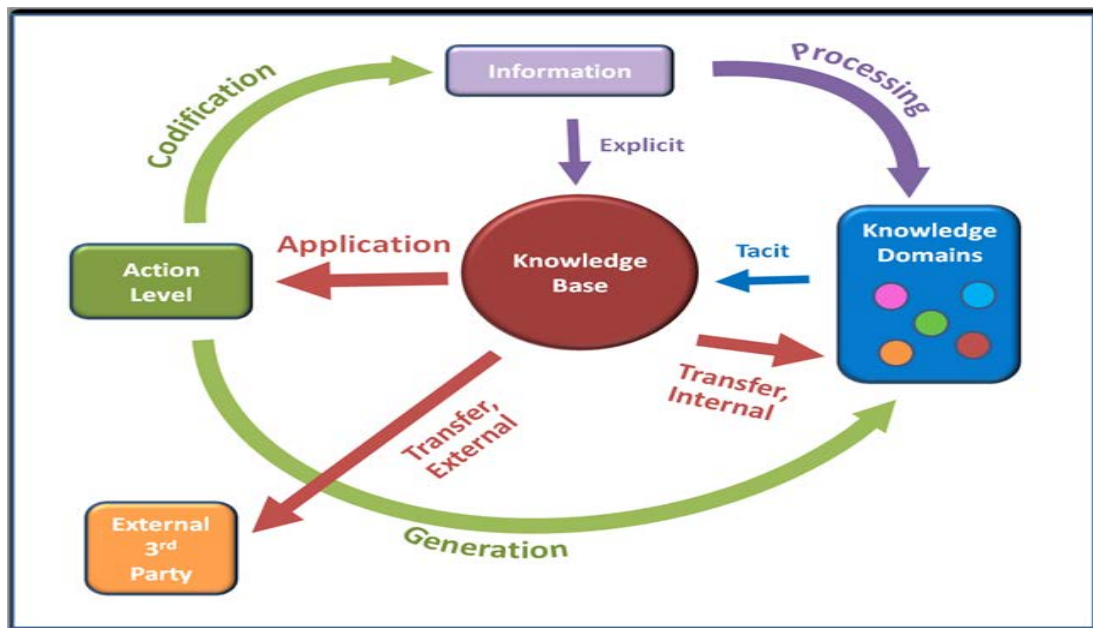
Learning Organization.) The second was Nonaka’s work on “tacit” knowledge and how to discover and cultivate it (Nonaka, Ikujiro & Takeuchi, Hirotaka, 1995 *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation.*) Both were not only about the human factors of Knowledge Management implementation and use; they were also about knowledge creation as well as knowledge sharing and communication. The trademark phrase of Stage two was “communities of practice”.

Taxonomy and Content Management

The third stage developed from the awareness of the importance of content, and in particular the awareness of the importance of the retrievability of content, and therefore of the importance of the arrangement, description, and structure of that content. Tacit knowledge represents internalized knowledge that an individual may not be consciously aware of, such as how he or she accomplishes particular tasks. At the opposite end of the gamut, explicit knowledge represents knowledge that the individual holds intentionally in mental focus, in a form that can easily be communicated to others. Hayes and Walsham (2003) describe content and relational perspectives of knowledge and Knowledge Management as two fundamentally different epistemological perspectives. The content perspective suggest that knowledge is easily stored because it may be codified, while the relational perspective recognizes the contextual and relational aspects of knowledge which can make knowledge difficult to share outside of the specific location where the knowledge is developed.

2. KNOWLEDGE MANAGEMENT PROCESS

Knowledge Management comprises of processes that facilitate the application and development of organizational knowledge and aims to create value and to increase or sustain competitive advantage for the organization in Strategic aspect it highlights the strategic importance of knowledge and its management in a company’s strategy, Managerial measurement to highlight organizational knowledge assessment and management and Operational element highlights the development and usage of knowledge in operational level decisions.



Source : <http://www.k-strategian.com/images/stories/k-strategian/knowledge-flow-s.png>

Companies create a great amount of data and information in their daily business activities or transactions include marketing, sales, finance, human resource management and procurement. It would be essential for the company to have a system of managing the newly created information so it can be reused to solve new problems or leveraged to value-add to other business activities. Companies may often receive a lot of feedbacks from clients on their products. This kind of data will be transmitted as information it could be very useful for the research and development team to come up with new improved products. Companies may find that they cannot meet their knowledge requirement from their available knowledge assets. The gap will have to be filled either by internally developing new knowledge or acquiring the knowledge from external sources. Knowledge creation can only be achieved in a creative environment that encourages teamwork, organizational learning and the use of creative potential. If managed successfully, the process can expand or change the company's knowledge base to meet the company's current and future needs.

Knowledge Codification

Data and information need to be organized and analyzed in order to turn them into useful knowledge for decision making. This is the stage where tacit knowledge is transformed into explicit knowledge and is very critical to the success of the other two stages - application and transfer. Without documenting and codifying tacit knowledge, its transfer for the purposes of learning and operation, both internally and externally, will be difficult to

achieve. Furthermore, legal protection of these valuable knowledge assets can only be done if the knowledge has been codified. For examples, patent applications require the complete disclosures of the inventions and trade secrets require the display of safe-keeping of documented information. The legal rights come with Internet protocol protection offers the company a unique advantage which can be used to derive revenues to commercialize. Early Knowledge Management technologies included online corporate yellow pages as expertise locators and document management systems. Combined with the early development of collaborative technologies, Knowledge Management technologies expanded in the 1990s in view to improve organizational performance. Related efforts in the field of Knowledge Management leveraged semantic technologies for search and retrieval and the development of e-learning tools for communities of practice (Capozzi 2007).

Knowledge Application

It is not unusual for companies to not to know how to generate value from the use of the knowledge assets they have. It is worse when a company does not even know the kind of knowledge it has. Knowledge Management offers a management system for the company to ensure that their knowledge assets when created are properly documented, and that the knowledge in different domain owners will be shared within the organization. When knowledge assets are documented and shared, knowledge operation will be facilitated. This is the stage in Knowledge

Management where value creation is delivered. By harnessing knowledge from different knowledge domains and competencies across the organization, direct impacts to the missions and goals of the company can be achieved.

Knowledge Transfer

Knowledge can be adapted and evolved through the processes of learning and sharing. The impact made by individual knowledge is not as great as collective knowledge so sharing within the organization should be encouraged. When a company has limited capability to effectively use certain knowledge, it would be worthwhile to consider external transfer to third parties who may have the competencies to utilize the knowledge for value creation. For example, a company may have invented a new technology but it does not have the capability to produce products based on such invention. The technology can be licensed to a third party who has the production facilities and the marketing and sales capability to sell the new product. To ensure success of this technology transfer, it is necessary that implicit knowledge and procedural knowledge are converted to explicit knowledge for easy learning, adaptation and utilization.

3. KNOWLEDGE MANAGEMENT AND INFORMATION TECHNOLOGY

Organizations have managed knowledge for centuries. However, the popular interest in digitizing business enterprises and knowledge embedded in business processes dates back to 1993. Around this time, the *Business Week* cover story on virtual corporations (Byrne, 1993) heralded the emergence of the new model of the business enterprise. The new enterprise business model was expected to make it possible to deliver anything, anytime, and, anywhere to potential customers. It would be realized by digitally connecting distributed capabilities across organizational and physical boundaries. Then the vision of the virtual, distributed, and digitized business enterprise became a pragmatic reality with the mainstream adoption of the internet and web. Incidentally, the distribution and digitization of enterprise industry processes was expedited by the growth of technology architectures beyond mainframe to client-server to the internet and the web and more recently to web services. Concurrently, the software and hardware paradigms have evolved to integrated hosted services and more recently to utility computing and on demand computing (Greenemeier, 2003a, b; Hapgood, 2003; Sawhney, 2003; Thickins, 2003) models. Organizations with legacy enterprise business applications trying to catch up with the business

technology shifts have ended up with disparate islands of diverse technologies. These are

The intranet

An intranet can be understood as a private analog of the internet, or as a private extension of the Internet confined to an organization. The first intranet websites and home pages were published in 1991. Intranets have sprung up across corporations at a rate that challenges any previous introduction of new technology. They are ideal environments for sharing information that is both dynamic and richly linked. However, most large organizations quickly reach a point where so much information exists on the intranet that it begins to suffer the same problems that exist on the World Wide Web. The intranet can be broken down into two distinct areas: the technology infrastructure (IP networks, universal web browser, thin client and the Hyper text mark-up language format), and the web server as a content repository. These recent changes the web browser and the web server being the most visible have enabled greater access to information for broader groups of knowledge workers and increased the speed of integration for application developers.

Allowing users to access all corporate knowledge through a web browser is not equivalent to forcing all knowledge assets onto the web server. Applications, particular repositories and various other knowledge silos will always exist because they have capabilities that are distinct from those of a generalized Knowledge Management system. Web sites are best used for hosting and managing content that is constantly changing and linked in a complex manner. But to the organization as a whole, each intranet site is just another type of knowledge silo, the content of which must be integrated in the organizations Knowledge Management system along with the other silos that exist across the enterprise

Document management systems

Document management systems are repositories of important corporate documents and are therefore important stores of explicit knowledge. They are also valuable tools for creating and processing complex documents, such as new drug applications in pharmaceutical companies. Document management systems excel at controlling the process of document creation, processing and review.

Some companies are approaching enterprise Knowledge Management based on document management. However, many have found that the bulk of knowledge workers resist using highly structured document management processes for

their entire document creation and management tasks. Most users do not participate directly in complex document creation and therefore do not realize enough value from those systems to make an investment in learning how to use them. Therefore, document management systems are important knowledge silos that must be integrated into the corporate knowledge infrastructure, but are not used by most organizations as the basis for a complete Knowledge Management system.

Information on retrieval engines

Information retrieval technology, whether it is in the form of corporate text repositories or intranet search facilities, exists in many organizations as a knowledge silo containing legacy information. Information retrieval vendors continue to be concerned with satisfying the needs of information seekers and have added features such as relevancy ranking, natural language querying, summarization and others that have increased the speed and precision of finding information.

Groupware and workflow systems

Organizations use groupware systems when users in workgroups or departments need to communicate and collaborate. Groupware allows formal conversations in cases when the participants cannot communicate in real time. This makes groupware a central technology for enhancing the replace of tacit information. Like other applications, groupware databases become knowledge silos that must be integrated into the enterprise knowledge architecture. It is an application software designed to help people involved in a common task to achieve goals. One of the earliest definitions of collaborative software is 'intentional group processes plus software to support them. (Johnson-Lenz and Peter, 1990)

Knowledge transfer processes often occur on an informal basis when the need for specific knowledge arises somewhere in the organization, but organizations also have a large number of formalized processes that regulate the flow of information. Workflow systems enable users to codify knowledge transfer processes when they require a more stiff method of distribution.

Push and pull technologies

Technologies that mechanize the transfer of information to end users have received considerable attention recently. Although e-mail served this purpose for over a decade, new web-based technologies have added better presentation, real-time updates and the ability to push applications as well as content. Substance push is a form of electronic publishing and is a central feature of a Knowledge Management system. Agents are a specialized form of push technology. Agents are controlled by the end user, who can specify the type of knowledge he or she wants to

receive. Agent capabilities are very valuable in knowledge-intensive environment, where knowledge workers do not have the time to frequently monitor prudent information resources. Knowledge Management systems should provide the means for users to easily incarcerate the particular kinds of knowledge assets they need to check without requiring them to learn complex search syntax. Another strategy to Knowledge Management involves individuals making knowledge requests of experts associated with a particular subject on an ad hoc basis. In such an instance, expert individual can provide their insights to the particular person or people needing this (Snowden, 2002)

Help desk technology

Many enterprises follow help-desk technology to respond to both internal and external requests for information. However, the knowledge accumulated in help-desk systems can have much broader applications than answering specific questions. For example, service request logs are valuable tools to assist in product design and improving services. To tap this potentially valuable information, companies will want to integrate their help-desk applications into the Knowledge Management system.

Brainstorming applications

Brainstorming tools help inspire creative thinking and alter tacit into explicit knowledge. These end user applications help label, organize and see knowledge resources and are therefore useful knowledge creation tools. While it should not try to copy their functionality, an organization's Knowledge Management system provide an easy way for users or these applications to identify, confine and share the results of these deeds with others across the enterprise.

Data warehousing and data mining tools

Organizations are creating data warehouses and arm their business managers with data mining tools to optimize existing associations and discover new ones between customers, suppliers and internal processes. Used primarily by business executives, leading organizations are now broadening their use since everyone in a knowledge-based organization needs to make decisions based on increasingly complex sets of information. Knowledge Management systems must provide meaningful access to data warehouses by supporting standard protocols such as Open Database Connectivity and Structured Query Language. Knowledge Management systems need to provide a way to express and provide access to common reports so that users not intimately familiar with data mining

tools and techniques can find and access current reports on subject areas they are investigating.

4. CONCLUSION

Organization should have sufficient management skills and the ability to adapt new behaviours and processes of Knowledge Management technologies to successfully manage an external and internal part of their business. Information technology, corporate culture and tacit knowledge must be combined when implementing Knowledge Management. The transfer of tacit knowledge can have a profound effect on quality and overall strategic business value. Corporate Cultural and information technology barriers add challenges to the already difficult process of transferring traditional organizations to value creation organization through Knowledge Management strategies. There were various Knowledge Management strategies from intranet to groupware and document management system facilitates the organizations to implement Knowledge Management strategies for automation of business processes on which value creation for stake holders and customers mostly depends. Finally, Knowledge Management strategies can be implemented that will maximize the benefits that are available from a business model.

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