Volume 6, Issue 4, April 2016 ISSN: 2277 128X
International Journal of Advanced Research in Computer Science and Software Engineering
Research Paper
Available online at: www.ijarcsse.com

Knowledge Management a Business Paradigm

Dr. Minakshi Dattatraya Bhosale
Assoc. Professor Faculty of MCA, Yashoda Technical Campus, Wadhe Phata, Satara, Maharashtra, India

Abstract: ***Knowledge is extantin ideas, judgments, talents, root causes, relationship and concepts of every individual. Knowledge be inherent in an individual brain or is encoded in organizational processes, documents, products, services, facilities and systems. Knowledge forms the basis for, and the driver of, postindustrial economy. Knowledge Management (KM) involves augmenting organizational knowledge through rigorous practices of information management and organizational learning.Substantial evidence has emerged to show that what matters is not the ability to generate information but to assimilate it. Knowledge Management deals with using information which creates value. Above research paper focused on Evolution of KM, Different KM tools used to enhance the operations of organization. To improve profits and expand revenue streams, how to use different organizational KM drivers. To enlighten the Organizational functions by using KM.***

Keywords: Knowledge Management (KM), Entrepreneur, Acquisition, Indexing, Capability Maturity Model (CMM), Paradigm.

I. INTRODUCTION

Knowledge has always been considered as power. The meaning of the word knowledge has been discussed for thousands of years (Avdic& Westin, 2002). Knowledge is stored in the individual's brain or encoded in organizational process, documents, products, services, facilities and systems. It has been traditionally associated with individuals in organizations who possess this knowledge (Davenport &Prusak, 1998). Knowledge is the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and motivations. "Knowledge has become the key economic resource."(Drucker, 1995). Knowledge work performed by professionals and managers will account for nearly 25% of the workforce soon after the 21st century, and, as a result, 40% of Fortune-1000 companies claim to have established the role of Chief Knowledge Officer (CKO) in their companies (Nissen, Kamel, &Sengupta., 2000; Roberts, 1996). Recently, interest in, and attention to, knowledge management systems has significantly increased in academic institutions, which depend upon knowledge-work processes to compete (McCartney, 1998). Managing knowledge has been found to be a difficult task (Davenport, 1995) and continues to be so to this day. For one thing, the management of knowledge is heavily information technology (IT) dependent, and the creation and utilization of knowledge is dependent on the individual (instructor and student) and his/her activities.

II. EVOLUTION OF KNOWLEDGE MANAGEMENT

The origins of knowledge management can be traced back to the late 1970s. Everett Rogers and Thomas Allen's work in information transfer laid the foundation to the concept of how knowledge is created, implemented, and integrated throughout an organization. In the 1980s, knowledge became a focal point to increasing the competitive edge for companies. People like Senge and Sakaiya discussed the advantages of creating learning and knowledge based organization. The primary object during this time was improving business in general. In the 1990s, knowledge management was introduced into mainstream business management publications. Authors like Tom Stewart, IkujiroNonaka, and Hirotaka Takeuchi brought formality to the managing of knowledge. In the mid 1990's, the Internet became the channel where knowledge management expanded greatly.

Explicit, structured knowledge is much easier to use and transfer, but it is also much more susceptible to leak to competitors (Boisot, 1998).The first generation of knowledge management has come and gone. The second generation, which promises both deeper insights and greater impact, will be less about data and more about the social nature of knowledge. The next shift from the second to the third generation could be described analogous, promising deeper understanding of the holistic functioning of social systems. Table 2.1 below summarizes the evolution of KM over the last five decades.

Table 2.1 Evolution of Km

Sr. No	Year	Summary of evolution
1	1950	Diversification, Electronic Data Processing, Quantitative Management, Management by objective
2	1960	Centralization & Decentralization, Conglomeration

3	1970	Strategic planning, Portfolio Management, Automation
4	1980	Total Quality Management, Downsizing
5	1990	Learning organization, Market Valuation, Information systems, Intranets/Extranets, Reengineering
6	2000	Knowledge Management, Knowledge sharing culture, Enterprise integration, Intellectual Capital Harnessing

(Source:-Knowledge Management by Sudhir Warier)

The level of interest in organizational knowledge enhancing program has been building for several years. Many innovative companies have long appreciated the value for knowledge to enhance their products and customer service.

- By retaining knowledge as organization downsize or restructure, organizations can save costly mistakes or reinvesting the wheel.
- Companies save millions a year by taking the knowledge from their best performers and applying it in similar situations elsewhere.
- Improved customer service, faster problem solving and more rapid adaptation to market changes, have resulted from a focus on corporate knowledge.

III. WHAT IS KNOWLEDGE MANAGEMENT?

Most of the organizations had a technology-focused strategy. The rapid advancement in technology brought in machines of high processing power at a lower cost which widened the scope of usage and their reach. Today an entrepreneur with a good quality workstation and requisite software could the planet, with minimal overheads. This has resulted in the creation of a global competitive market and to ensure survival, an organization needs to be highly proactive rather than trusting on its financial and technical prowess alone. This is where the practice of KM becomes critical to the success and survival of organizations in today's global economy.

Knowledge management is a collaborative and integrated approach to the creation, capture, organization, access, and use of an enterprise's intellectual assets. (Grey 1996)

Knowledge management is one of those concepts that librarians take time to assimilate, only to reflect ultimately "on why other communities try to colonize our domains."(Hobohm2004, 7)

Knowledge management " is understanding the organization ' s information flows and implementing organizational learning practices which make explicit key aspects of its knowledge base. It is about enhancing the use of organizational knowledge through sound practices of information management and organizational learning. " (Broadbent1997, 8 – 9)

Knowledge Management initiatives within an organization have basic four objectives.

- Effective harnessing or leveraging of the IC of an organization in the best possible fashion.
- Promoting enhanced knowledge dissemination within the organization with the help of internal as well as external learning processes and systems.
- Transforming individual knowledge in to the structural capital of the enterprise.
- Aligning business strategy with the existing core competencies of the organization and its capabilities.

IV. KM TOOLS

4.1 General tool

1. Groupware systems & KM 2.0
2. The intranet and extranet
3. Data warehousing, data mining, & OLAP
4. Decision Support Systems
5. Content management systems
6. Document management systems
7. Artificial intelligence tools
8. Simulation tools
9. Semantic networks

4.2 Knowledge Acquisition tools

- E-mail
- Listservs
- Newsgroups
- BBSes
- Web conferencing
- Internet Relay Chat(IRC)
- Muds/Moos
- IPhone and Internet Radio
- Desktop Video Conferencing
- VRML Chat Systems

4.3 Knowledge indexing tools

- Standalone tools usually used for back-of-the-book indexes, allow indexers to work from page numbered galleys
- Embedding tools allow indexing codes to be embedded in the electronic text of a book or file, and allow the indexes' locators to be updated as the text changes.
- Tagging tools allow indexing codes to be embedded in the electronic text after the indexing is complete.
- Keywording is used primarily in online help materials. It can be hard coded jumps, similar to HTML jumps, or it can be inserted as embedded coding and compiled in to a list by the software.
- Weighted-text search tools, similar to the intelligence in agents or Microsoft office assistant, involve building terminology sets are built specifically for the information system.
- Automated indexing software-builds a concordance, or a word list, from processed files. Although the manufacturers often claim these packages build indexes, the actual results are a list of words and phrases, sometimes useful in the beginning stages of building and index.

4.4 Knowledge dissemination tools

- ART*Enterprise object oriented client/server tool with case-based retrieval of both structured and unstructured information from Bright ware
- Grapevine two versions one for lotus notes and one for Netscape in which users can set up an interest profile that identifies what is useful to them and so filter information.
- Knowledge software two products PKM (the personal knowledge Manager) and PDP (the Personal Development Plan) both based on Lotus Notes.
- Knowledge Xchange knowledge management system-a lotus notes based system, the current users are Andersen Consulting professionals
- Microsoft NetMeeting Net meeting for Windows 95 and Windows NT is a product that provides the most complete conferencing solution for the Internet and corporate intranet.

V. ORGANIZATIONAL KNOWLEDGE MANAGEMENT –DRIVERS

The primary driver behind the implementation of a KM solution is to improve profits and expand revenue streams. Other secondary drivers include employee retention and increased customer satisfaction.

5.1 Key organizational knowledge based drivers as follows.

- Organizational inability to index and leverage their intellectual capital.
- The overwhelming requirement for efficient knowledge sharing.
- Need for efficient knowledge dissemination techniques and associated solutions.
- Organizational process/procedures/culture re-engineering.

5.2 Key technology drivers within an organization:

- The end of technology as a viable long-term differentiator for an organization.
- Reduction of product and process life cycles.
- The resultant linkage between knowledge, business strategy, and information technology.

5.3 Intra- organizational drivers:

- Need for functional convergence within most organizations.
- Emergence of project-centric organizational structures.
- Increased international cooperation among nations leading to changes in the business scenario.
- The resultant inability of companies to keep pace with competitive changes.
- Products and services convergence.

5.4 Human resource drivers

- Widespread functional convergence.
- Support for effective cross-functional collaboration.
- Accommodate complex corporate expectations
- Accommodate enhanced team mobility and fluidity.

5.5 Process drivers

- Avoid often repeated and expensive mistakes.
- Need to avoid unnecessary duplication
- The need for accurate predictive anticipation.
- The emerging need for competitive responsiveness.

5.6 Economic drivers

- The potential for creating extraordinary leverage through knowledge and the resultant attractive economics of increasing returns.
- The quest for a silver lining for product and service differentiation.

VI. ORGANIZATIONAL KNOWLEDGE MANAGEMENT APPROACHES

The four commonly used approaches of Knowledge Management are as follows.

a) Repository model approach: -This approach mainly focused on management of document and the reuse of explicit forms of knowledge.

b) Communities of practice (COP) approach:-This approach facilitates the transfer of knowledge by experts within affinity groups through dialogue and interpersonal discussion.

c) Continuous learning approach: - This approach facilitates the application of the knowledge acquired by individuals in problem solving as well as enhanced decision making.

d) Business Intelligence approach: - It creates enterprise wide repositories and the extraction of valuable information and knowledge through the mining of these repositories.

Besides the above-mentioned approaches, the following could also be employed by organizations in their quest for leveraging their intellectual capital.

- Innovation
- Quality control Strategic competency development
- Networking
- Knowledge technology
- Human Resource Management
- Learning organization
- Information and communication technologies
- Organizational
- Intellectual capital

VII. KM ARCHITECTURE

The salient feature of this architecture is its simplicity in nature. This new architecture minimizes the time overhead required for knowledge serving. It provides smooth communication between agents which will guarantee to produce the desired result. Knowledge management requires several components:

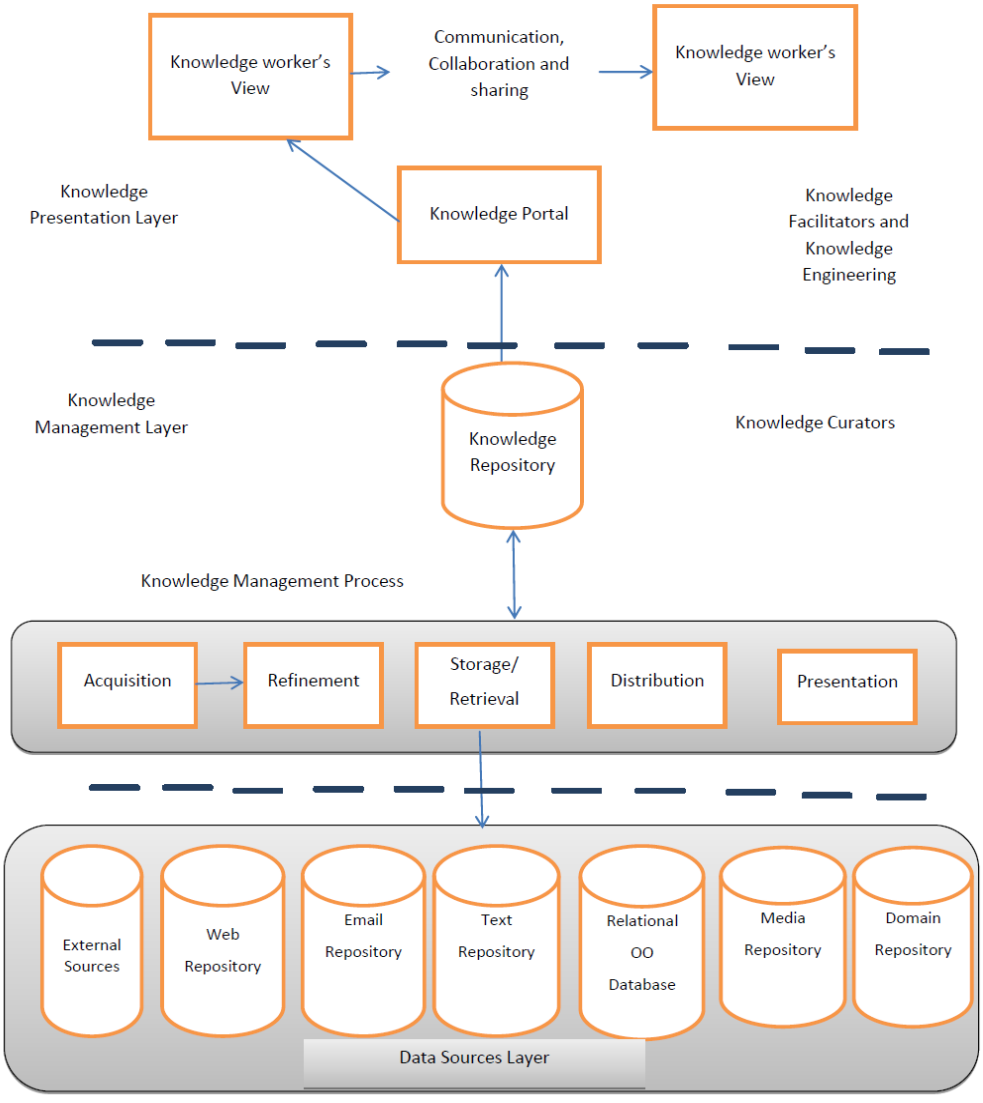

Fig:-7.1 Knowledge Management Architecture

- Access to both internal and external information sources,
- Repositories that contain explicit knowledge,
- Processes to acquire, refine, store, retrieve, disseminate and present knowledge,
- Organizational incentives and management roles to support these activities,
- People who facilitate, curate, and disseminate knowledge within the organization.
- Information technology to provide automation support for many of the above activities.

VIII. KM APPLICATIONS

Knowledge management can be applied to many areas of the organization. Remember that knowledge management is not only storing knowledge. The larger focus is on sharing. With this in mind, applying knowledge management in the workplace is nearly unlimited. Areas that can benefit from knowledge management are corporate governance, Staff training, Operations, Human resources, Marketing, Information technology, Research and development.

Applying knowledge management in any one of these areas will lead to improved communication and responsiveness to change. Here are some potential benefits to implementing knowledge management is Encourage innovation by allowing ideas to flow throughout the organization, Improve customer experience by becoming more efficient in service, Increase profits by capitalizing on opportunities because of faster product- to- market time, Increase retention rate of employees because of recognition and reward for their valuable knowledge input, Reduce cost through improved internal efficiencies

Knowledge processing and the associated set of applications can be segmented in to two broad classes: integrative and interactive each addressing different KM objectives.

8.1 Integrative Applications

These applications exhibit a sequential floe of explicit knowledge in to and out of the repository. Producers and consumers interact with the repository rather than with each other directly. The primary focus tends to be on the repository and the explicit knowledge it contains, rather than on the contributors, users, or the tacit knowledge they may hold.

Integrative applications vary in the extent to which knowledge producers and consumers come from the same knowledge community. The organizational roles for managing integrative applications, acquisition requires knowledge creators, finders, and collectors. Capturing verbal knowledge requires interviewers and transcribers. Documenting observed experiences requires organizational reporters. Refining requires analysts, interpreters, abstractors, classifiers, editors and integrators. Finally, organizations may need people to train users to critically interpreter, evaluate and adapt knowledge to new contexts.

8.2 Interactive Applications

Interactive applications are focused primarily on supporting interaction among people holding tacit knowledge. In contrast to integrative applications, the repository is a by-product of interaction and collaboration rather than the primary focus of the applications. Its content is dynamic and emergent.

Interactive applications vary by the level of expertise between producers and consumers and the degree of structure imposed on their interaction. Where a formal training or knowledge transfer is the objective, the interaction tends to be primarily between instructor and student, or expert and novice, and structured around a discrete problem, assignment or lesson plan. A standard categorization scheme for indexing contributions provides the ability to re-apply that knowledge across the enterprise. An interactive application plays a major role in supporting integrative applications.

IX. GENERIC ROLE REQUIREMENTS

TCS, Infosys, IBM, Oracle, and Satyam Computers have their learning centers or knowledge management team, who are responsible for strategizing to implementation. The organizations like Wipro, TCS, Seimen's Information Systems, SSI Datametics, Techspan, IBM Global, Infosys, Satyam and Accenture have taken the lead by modeling their people processes as per the people CMM model which has been developed by Software Engineering Institute (SEI).It provides what an organization must do to improve and mature its people practices and to get appropriate results through surveys and other assessment methods. (Dr. Sant wana Chaudhuri).Generic role requirements for the various managerial as well as technical roles in the field of organizational knowledge processing are described as follows.

9.1 Information Professional role:-

- Conduct information research
- Select, evaluate, acquire external content sources
- Train and educate end-users
- Develop & manage overall content solutions for end users
- Manage desktop deployment of external content

9.2 Information Analysis role:-

- Competitive intelligence gathering
- Industry Analysis

- Patent assessment
- Technology assessment
- Market intelligence gathering

9.3 Content solutions Management Role

- Compare competitive content offerings
- Develop content source strategy
- Conduct user-needs assessments
- Develop/test content value proposition
- Develop content business/market plans
- Develop/manage content brand.
- Perform content financial analysis

9.4 Project Coordination's Role

- Conduct information research
- Enable access to information
- Capture ongoing processes and their progress
- Synthesize project learning

X. CONCLUSION

Knowledge Management involves connecting people with people, as well as people with information. They have to transform information and knowledge in to action. Be acquainted with the potential of knowledge management will hearten companies to use KM system. Difference in applying the knowledge management depends on type of employees, history, structure and culture of company. The key is making sure that people, particularly in top management, understand the advantages of knowledge management and what makes it useful. The firms can derive significant benefits from consciously, proactively, and aggressively managing their explicit and explicable knowledge. As the KM field expands, organizations increasingly rely on "knowledge workers" to generates, classify, manage and distributes tacit & explicit knowledge.

REFERENCES

[1] A report on Knowledge Management Services, 21 May 2001, Government Computer News (GCN). 21 May 2001<http://www.gcn.com>

[2] Avdic, A., & Westin, O. (2002). A local information systems perspective on knowledge management. The Xth European conference on Information Systems, June.

[3] Bashein, B. J., Markus, M. L., & Riley, P. (1994 Spring). "Preconditions for BPR Success: And how to Prevent Failures, "Information Systems Management, 11(2), pp. 7-13.

[4] Boisot, Max H. (1998): Knowledge Assets: Securing Competitive Advantage in the Information Economy, New York: Oxford University Press, 1998.

[5] Broadbent, M. 1997. The emerging phenomenon of knowledge management. Australian Library Journal 46(1): 6 – 24.

[6] Davenport, T. H. (1995). Business process reengineering: Where it's been, where it's going. In V. Grover and W. Kettinger (Eds.), Business process change: Reengineering concepts, methods and technologies (pp. 1-13). Hershey, PA: Idea Group.

[7] Davenport, T. H., &Prusak, L. (1998). Working knowledge: How organizations manage what they know. Boston, MA: Harvard Business School Press.

[8] (Dr. Sant wana Chaudhuri) "Knowledge Management in Indian IT Industries" 2011 3rd International Conference on Information and Financial Engineering IPEDR vol.12 (2011) © (2011) IACSIT Press, Singapore

[9] Drucker, P. F. (1995). Managing in a Time of Great Change. New York, NY: Truman Talley.

[10] Gery, G. 1991. Electronic performance support systems. Cambridge, MA: Ziff Institute.

[11] Hobohm, H.-C., ed. 2004. Knowledge management. Libraries and librarians taking up the challenge. IFLA Publications Series 108. Berlin: Walter de Gruyter GmbH &Co. KG.

[12] E Sudhir Warier "Knowledge Management" Vikas Publishing house Pvt. Ltd.

[13] Nissen, M., Kamel, M., &Sengupta, K. (2000). Integrated analysis and design of knowledge systems and processes. Information Resources Management Journal, 13(1), 24-43.

[14] Novak, j. D. (1977). A theory of Education, Ithaca, NY, Cornell University Press.

[15] Windows Netmeeting Home Page, 18 November 2001, Microsoft 18 November 2001<http://www.microsoft.com/wondows/netmeeting>

