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## KNOWLEDGE MANAGEMENT FOR R & D ORGANIZATIONS : A TODAY'S ESSENCE

IRANNA M SHETTAR

### Abstract

Knowledge Management is a newly emerging, interdisciplinary business model that has knowledge within the framework of an organization as its focus. Knowledge Management has now become a mainstream priority for any of the organization. This article gives brief introduction about Knowledge Management, its need, definition, components, Assets. It also provides detailed narration of Lifecycle and Myths about knowledge management at any organization.

**Keywords:** Knowledge Management/ R & D Organizations/ KM Components/ KM Assets/ KM Lifecycle/ KM Myths.

### 1. Introduction

The concept of information and its format has dramatically changed over the last two decades because of the revolution in Information and Communication Technology. Changes in IT have generated gaps in access and control of information and knowledge. Even when these gaps are bridged, several fundamental challenges remain. How do we apply knowledge for value added and competitive advantage? How do we convert information into knowledge? How do we use technology to convert challenges in to opportunities? "Knowledge Management" is the solution for realigning the institute's technical capabilities to create the knowledge.

Knowledge Management is the process of gathering, managing and sharing with associates the knowledge in the organization. Knowledge sharing throughout the organization enhances existing organizational research processes, introduces more efficient and effective research processes and removes redundant processes. It is a discipline that promotes a collaborative and integrated approach to the creation, capture, organization and use of enterprise's knowledge assets.

### 2. What is Knowledge Management?

Knowledge management is the name of a concept in which an organization or an institute consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills. In early 1998, it was

believed that few organizations actually had a comprehensive knowledge management practice (by any name) in operation. Advances in technology and the way we access and share information has changed. Many enterprises now have some kind of knowledge management framework in place.

In simple terms, Knowledge management is 'Knowing what you know and then bringing profit from it.' Knowledge management differs from organization to organization in the way they create, capture and reuse the knowledge. Some definitions of Knowledge management are given below:

The Gartner Group (2005) defines KM as a discipline that promotes an integrated approach to identifying, managing and sharing of all of an enterprise's information assets. These information assets may include database documents, policies procedures as well as previously unarticulated expertise and experience resident in individual workers. Knowledge management issues include developing, implementing and maintaining the appropriate technical and organizational infrastructure to enable knowledge sharing. [1]

Broadbent (1997) defines KM as 'a form of expertise management which draws out tacit knowledge, making it accessible for specific purposes to improve the performance of organization; about how the organization's 'know-how' should be structured, organized, located and utilized to provide the most effective action at that point in time'. [2]

### **3. Need of Knowledge Management for R&D:**

With the pace at which information is generated, it is not possible to assess the value of every piece of information. Further, one individual's rating on importance of information differs from that of another. The Knowledge Management System captures and integrates knowledge of individuals and makes it available at a common place. It connects the people involved in similar activity and encourages bonding in teams or in research groups. It helps in enhancing the process of development activity and results in accelerating innovations.

Knowledge Management solutions are now most important strategic technologies for large research organizations, according to a report and survey of European executives by the Economist Intelligence Unit (EIU) sponsored by Tata Consultancy Services. In the survey, 67% of companies cite Knowledge Management / Business intelligence Solutions as important to achieving their strategic goals over the next three years. [3]

The need for a different kind of learning & research approach has been also noted within the Knowledge Management literature, like in:

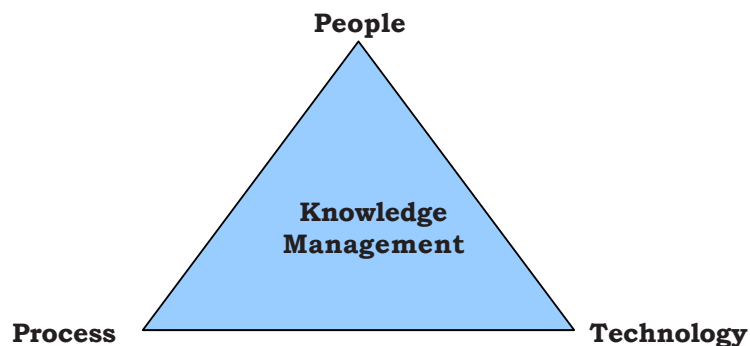
"The traditional education and research paradigm is inappropriate for studying the types of open ended and multidisciplinary problems that are most pressing to our society. These problems, which typically involve a combination of social and technological issues, require a new paradigm of research and learning skills, including self-directed learning, active collaboration and consideration of multiple perspectives." [4]

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#### 4. Components of Knowledge Management

Based on actual experiences of the leading global KM case studies, the components for KM can be broadly categorized into three classes - People, Processes, and Technology (Figure 1). While all three are critical for building a learning organization and get business results from KM, a majority of organizations worldwide implementing KM have found it relatively easier to put technology and processes in place, whereas the “people” component has posed greater challenges.

The biggest challenge in KM is to ensure participation by the people or employees in the knowledge sharing, collaboration and re-use to achieve business results. In many organizations, this requires changing traditional mindsets and organizational culture from “knowledge-hoarding” (to keep hidden or private) to “knowledge-sharing” (share among team members) and creating an atmosphere of trust. This is achieved through a combination of motivation / recognition and rewards, re-alignment of performance appraisal systems, and other measurement systems. A key to success in Knowledge Management is to provide people visibility, recognition and credit as “experts” in their respective areas of specialization - while leveraging their expertise for business success.



The Process component include standard processes for knowledge-contribution, content management (accepting content, maintaining quality, keeping content current, deleting or archiving content that is obsolete), retrieval, membership on communities of practice, implementation-projects based on knowledge-reuse, methodology and standard formats to document best-practices and case studies, etc. It is important for processes to be as clear and simple as possible and well understood by employees across the organization.

KM technology solutions provide functionality to support knowledge-sharing, collaboration, workflow, document-management across the enterprise and beyond into the extended enterprise. These tools typically provide a secure central space where employees, customers, partners and suppliers can exchange information, share knowledge and guide each other and the organization for better decisions. The most popular form of KM technology enablement is the Knowledge-Portal on the Corporate Intranet (and extranets where customers, partners and/or suppliers are involved). Common technologies used for knowledge portals include standard Microsoft technologies

or Lotus Notes databases. A company must choose a technology option that meets its KM objectives and investment plan. While technology is a key enabler to KM, it is important to ensure that the technology solution does not take the focus away from business issues and is user-friendly and simple to use. Many companies have made the mistake of expending a disproportionately high portion of their KM effort and resources on technology - at the cost of people-involvement or strategic commitment - resulting in zero or very limited business results. It is also important to remember that users of the KM system are subject-matter experts in their respective areas of specialization and not necessarily IT experts. [5]

## **5. Knowledge management assets**

Typically, there are six knowledge assets in an organization, namely:

1. Stakeholder relationships: includes licensing agreements; partnering agreements, contracts and distribution agreements.
2. Human resources: skills, competence, commitment, motivation and loyalty of employees.
3. Physical infrastructure: office layout and information and communication technology such as databases, e-mail and intranets.
4. Culture: organizational values, employee networking and management philosophy.
5. Practices and routines: formal or informal process manuals with rules and procedures and tacit rules, often refers to “the way things are done around here”.
6. Intellectual Property: patents, copyrights, trademarks, brands, registered design and trade secrets. [6]

## **6. Knowledge management Life Cycle**

Knowledge management goes through a series of steps, making up an ongoing life cycle. The four-step process, summarized in the table below includes gathering, organizing, refining and disseminating.

The capturing phase deals with knowledge capture and includes e-mail, audio files, digital files and the like. In this phase, it is important to go to all the sources available and never judge the usefulness of the captured knowledge until after it is subjected to exhaustive testing. In this phase, KM Systems are an ideal approach to eliciting and representing knowledge into a form that can be available to many users- a key KM process.

After the capturing phase, captured data or information should be organized in a way that can be retrieved and used to generate useful knowledge. One can use indexing, clustering, cataloguing, filtering, codifying and other methods to do the organizing. Speed, user-friendliness, efficiency of access and accuracy are important elements to consider throughout the organizing phase.

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<b>Four-Process view of Knowledge Management</b>	
Capturing	Data entry Scanning Voice input Interviewing Brainstorming
Organizing	Cataloging Indexing Filtering Linking Codifying
Refining	Contextualizing Collaborating Compacting Projecting Mining
Transfer	Flow Sharing Alert Push

After organizing the information, it should be refined. Data mining can be applied in this phase. Data mining takes explicit knowledge found in databases and transforms it into tacit knowledge. Data mining software is used to find patterns in data, predict behavior, and warn against future problems based on the data supplied in the data warehouses.

After the refining phase, knowledge should be disseminated or transferred. This includes making knowledge available to associates (employees) via tutorials or guidelines for effective use. Predictive models can be designed to alert users to consequences of certain projects or human resource activities. The key point is not to let stored or available knowledge lie idle in a repository like a database. It should be available to authorized users to contribute to the organizational competitive advantage. [7]

**7. Myths about Knowledge management:**

- Knowledge management is a fad.
- Knowledge management and data warehousing are essentially the same.
- Knowledge management is a new concept.
- Knowledge management is mere technology.
- Technology distributes human intelligence.
- Knowledge management is another form of reengineering.
- Associates have difficulty sharing knowledge.

- Knowledge management only works within an organization.
- Technology is a better alternative than face-to-face.
- It is “no brainer” to share what you know. [8]

## 8. Conclusion

Knowledge is an important asset for any organization. As we are living in a knowledge society, knowledge management has become powerful tool for promoting innovation and reengineering various walks of Research and Development. Knowledge management requires a holistic and multidisciplinary approach to management process and an understanding of the dimensions of knowledge work. Knowledge management should be the evolution of good management practices sensibly and purposively applied. Knowledge management presents a major shift in focus regarding the development and use of knowledge and information in increasing the effectiveness of any organization.

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**Mr. Iranna M. Shettar** is presently working as Officer, Library & Information Center in Tata Consultancy Services Ltd. Mumbai. He has completed his MLIS with first class with distinction from Karnatak University, Dharwad. His areas of specialization are Information Retrieval; Automation; Knowledge Management and IPR.

**Email : [iranna.shettar@tcs.com](mailto:iranna.shettar@tcs.com)**