

Leveraging Knowledge Management: Challenges for the Information Professional

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ABSTRACT

Knowledge management (KM) is a very rapidly developing area in which the library and information professionals have a critical role. Significant changes are required in their role, skills, education and training so that they can confidently face the challenges of KM in the changing digital environment. The paper describes the process and various information and communication technology tools involved in KM and discusses the transformation of information management to KM. The paper also highlights the role, skills and challenges library and information professionals need for managing knowledge.

Keywords: Information management, librarian, knowledge management, information and communication technology, information professional

1. INTRODUCTION

In the current era of knowledge-driven society, knowledge is a critical resource, which needs to be leveraged and utilised optimally. Information and communication technology (ICT) has been the key in the KM process. A technology-driven organisation needs to leverage KM process efficiently to be effective and competitive. Such organisations tend to capture tacit knowledge using various IT-based technologies like data mining and make this knowledge explicit and available in public domain for intellectual consumption. Information repositories like knowledge centres or libraries have begun to appreciate the

power of the KM systems and are investing their critical resources in terms of manpower and technologies to make them technology-driven. The functions of information professionals are undergoing drastic changes in terms of moving beyond cataloguing and sorting to include providing customised information to individual requirements. Therefore, information professionals, today, need to be intellectually equipped to leverage KM systems to provide required customised services efficiently.

2. WHAT IS KM ?

Knowledge is information in our mind and tested in practice. It is contextual and

can be categorised as explicit (knowledge that can be codified), and tacit (knowledge that remains in ones mind and can not be codified). Examples of explicit knowledge are databases, data warehouses, data marts, documents, software codes, etc. Examples of tacit knowledge include techniques and insights gained from personal experiences and interactions¹. Wisdom is integrated knowledge. It is the ability to use one's knowledge and experience for making good decisions and judgments.

Various practitioners and research scholars have defined KM in different ways. But the main emphasis remains on the sharing of information assets of organisational knowledge. Gartner Group² defined KM as a "discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These information assets may include databases, documents, policies and procedures as well as previously unarticulated expertise and experiences resident in individual workers. KM issues include developing, implementing and maintaining the appropriate technical and organisational infrastructures to enable knowledge sharing..."

According to Liebowitz and Beckman³ "KM covers identifying what knowledge assets an organisation possesses, analysing how the knowledge can add value, specifying what actions are necessary to achieve better usability and added value, and reviewing the use of the knowledge to ensure added value." Thus, KM is a strategy to provide the right knowledge to the right people at the right time and to help people share and utilise this knowledge so that organisational performance can be improved. KM facilitates creation, access and reuse of the knowledge. It involves, finding out what an organisation knows; where the knowledge resides in the organisation; how to locate people with specific knowledge, expertise and experience; and how to share and utilise the accumulated knowledge.

3. PROCESSES OF KM

KM processes are the activities put in place to enable and facilitate the creation,

sharing and use of knowledge for the benefit of the organisation. The main processes are knowledge generation, knowledge storage, and knowledge utilisation. These are carried out in a spiral way (Fig. 1). After knowledge is created/acquired, stored, shared and utilised, it goes to next phase of enhancing/refining of existing knowledge, and identifying and acquiring new knowledge. Though KM processes involve many steps, knowledge creation and sharing are the primary concerns of a KM programme. The various processes and sub-processes of KM programme have been discussed below.

3.1 Knowledge Generation

It comprises knowledge identification, acquisition, capturing, and synthesis. Knowledge identification is essential to know what knowledge the organisation and its people require in order to meet their goals and objectives. This can be done by surveys, interviews and group discussions. Knowledge acquisition involves bringing knowledge into the organisation from external sources. It deals with acquiring knowledge skills, theories and experience needed to create core competencies and knowledge domains. Use of ICT can expedite knowledge acquisition at a low cost. Knowledge capturing requires capturing by tacit knowledge of the organisation gained and built through years of experience. This knowledge has to be captured by proper documentation, through mentoring, training and surveys.

Knowledge synthesis is analysis of existing knowledge and discussion with various experts on a specific subject or issue. The knowledge synthesised is more accurate, complete and enhanced. Synthesis of knowledge can be a useful tool for the preparation of new research projects, solving various problems, and for creating a more comprehensive, overall perspective on a specific subject.

3.2 Knowledge Storage

The acquired knowledge should be codified and stored in the databases and knowledge warehouses, where it can be easily accessed and utilised by the organisation. Knowledge

affects individual and organisational performance. Artificial intelligence, expert systems, information retrieval technology, electronic publishing technology, computer-supported collaborative work, groupware, decision support systems, database technologies, help-desk technology, brainstorming applications, performance-support systems, simulation softwares, document management, web mapping tools are few technologies which are connected to KM. The various ICT tools, which are used in the various steps in KM process, are given in Table 1.

4. FROM IM TO KM

KM encompasses both the management of information and the people. Knowledge cannot be managed directly—only the information about the knowledge possessed by people in organisations can be managed⁵. The statement indicates that strong IM principles and practices form a solid foundation on which successful KM strategies can be developed. IM is the application of principles of management to the acquisition, organisation, control, dissemination and use of information in the

Table 1. ICT tools for KM process

KM processes	ICT tools
Knowledge generation	<ul style="list-style-type: none"> ▪ Brainstorming applications ▪ Electronic support systems ▪ Video conferencing ▪ Discussion boards
Knowledge organisation	<ul style="list-style-type: none"> ▪ Electronic publishing technology ▪ Document management ▪ Web search engines ▪ Help-desk technologies
Knowledge storage	<ul style="list-style-type: none"> ▪ Expert systems ▪ Database technologies ▪ Web-mapping tools ▪ Electronic publishing technology
Knowledge transfer	<ul style="list-style-type: none"> ▪ Bulletin boards ▪ Video conferencing ▪ Brainstorming applications
Tacit to tacit	
Tacit to explicit	
	<ul style="list-style-type: none"> ▪ Database technologies ▪ Data warehousing ▪ Data mining
	<ul style="list-style-type: none"> ▪ Document management systems ▪ Expert systems ▪ Groupware/computer-supported systems
Explicit to explicit	<ul style="list-style-type: none"> ▪ Database technologies ▪ Data warehousing ▪ Web search engines ▪ Data mining
Explicit to tacit	
Knowledge utilisation	<ul style="list-style-type: none"> ▪ Decision-support systems ▪ Simulation software

Source: Adopted and modified from Dutta⁴

libraries and information centres. IM deals with the information present in the documented form. Knowledge is considered a resource now. KM is about managing knowledge of its people and their expertise, experience, skills, competencies, ideas, intuitions, commitments, and motivations in a documented form. KM practices bring out the tacit knowledge of the people and their experiences and sharing, and utilisation of that knowledge for the benefit of the organisation. Table 2 shows the transformation of IM to KM.

5. MANAGING KNOWLEDGE

5.1 Role of Information Professionals

The conventional role of library and information professionals was to collect, process, disseminate, store and utilise information to provide multi-disciplinary services to the personal and professional needs of the library users. They were also involved in a continuous search for excellence and codifying information sources. But now their role is not restricted to information management only. They play major role in KM programmes and in identifying, acquiring, developing, resolving, storing and sharing of knowledge.

In addition, to satisfy the information needs of the users, they have to understand the knowledge needs of the organisation and its people also. They have to create an approach to transform and share tacit and explicit knowledge and enable utilisation of knowledge.

The information professional now needs to develop knowledge about the nature of the knowledge required by the organisation and knowledge behaviour of the people and how people acquire knowledge, i.e., how people share, disseminate and utilise knowledge. They should know about the needs, role and value of the knowledge in the organisation. Kim⁶ stated that “Library and information professionals should shape the knowledge policies, structures, processes and systems that will nurture organisational learning. They should be able to extract, filter and disseminate vital external knowledge”.

Shanhong⁷ opined that “KM in libraries should be focused on effective research and development of knowledge, creation of knowledge bases, exchange and sharing of knowledge between library staff and users, training of library staff, speeding up explicit processing of the implicit knowledge, and realising need of its sharing”.

Library and information professionals have to manage relationships with external providers of information and knowledge and should negotiate with them. They should design, implement, and oversee library’s knowledge infrastructure, computer knowledge networks, and content management of the organisation’s Intranet. They have to provide critical input to the process of knowledge creation and its use and should continuously evaluate its relevance to the organisation⁸. They have to design information systems, which will ensure ongoing knowledge flow from external

Table 2. Transformation of IM to KM

Past and present practices in IM	Future directions for KM
Identification of information needs of organisation and individual, and collection of required information by acquiring books, journals and other printed materials	<ul style="list-style-type: none"> ▪ Mapping knowledge requirements ▪ Creation and utilisation of knowledge for organisational benefits ▪ Collection of expertise, skills, and capturing of other form of tacit knowledge
Information organisation through classification, cataloguing, indexing	Knowledge organisation through metadata, knowledge mapping, use of artificial intelligence, expert systems
Concentration on information and data present in books, journals either in printed or digitised form	Focus on tacit knowledge of people, expert’s knowledge, organisation’s past experiences
Acquisition, storage, processing and retrieval of information	Sharing knowledge, transfer of experience

and internal sources. They have to identify barriers and priorities changes, which will enhance the spontaneous flow of knowledge throughout the organisation. They should work side by side with users in collecting and analysing strategic intelligence, and should act as trainers and consultants who transfer knowledge gathering and research skills throughout the organisation.

Abell and Oxbro⁹ stated that “Library and information professionals have to identify, acquire and evaluate internal and external sources of knowledge and integrate, organise and make relevant knowledge available to the right person at the right time”. Educating people the advantage of sharing knowledge, experience and expertise is an important task that library and information professionals have to perform. Staff should be trained to use a wide range of retrieval and analysis tools. Guns¹⁰ has laid down following role and responsibilities for the library and information professionals in KM programme:

- ✘ Warehouse and track information and maintain a knowledge inventory.
- ✘ Ensure the right kind of technology is in place such as Internet, Intranet, databases, and library softwares, OPAC, etc.
- ✘ Identify valued skills, knowledge and expertise in the organisation.

Carrillo¹¹ proposed three main roles for the knowledge professionals: Managing knowledge repositories; facilitating knowledge flow and communication; and leveraging value generation capacity. All KM strategies are likely to embrace elements of all three of these approaches. Not one of these can be achieved without some attention to the others. There will be no knowledge repositories to manage unless knowledge creators and owners can be persuaded to communicate and contribute to knowledge repositories. Similarly, leveraging value generation capacity requires good access to shared knowledge about the organisation, its value generating processes, and environment.

Managing knowledge repositories involves evaluation, filtering, signposting, structuring,

facilitating access, packaging, and presenting knowledge¹². ICT tools support these processes, and library and information professionals have developed their skills for the management of both printed and electronic sources. Users need seamless access to knowledge repositories whether those repositories are in the print, electronic, or in the form of other people or communities.

Facilitating knowledge flow requires information professionals to have membership of network associated with a knowledge community. They have to act as a network hub or a virtual community manager, build and maintain expert databases, and encourage and manage contributions to knowledge repositories. In general, facilitating knowledge flow requires both technological and social aspects, and ensures both availability of the tools and user training so that users find these tools easy to use.

For leveraging value generation capacity, informational professionals have to take an active role in helping others to develop behaviour, actions and culture that optimises value generation. This is associated with a realistic vision of the organisation and its resources and processes.

Overall, informational professionals have to perform the following roles to leverage KM programmes:

- ✘ Management of contents from licensed online resources like e-books, e-journals, databases, etc.
- ✘ Analysis of documents, organisation, classification and sorting, and their archiving for easy retrieval and faster dissemination.
- ✘ Creating new knowledge through filtering, consolidating, and repackaging information.
- ✘ Understanding users need, helping them to locate and retrieve information of their own.
- ✘ Training of users to maximise use of the knowledge repository.
- ✘ Communication in the hierarchical structure of management to keep track of the process of workflow in the organisation.

- ✘ Digitisations of various in-house documents like project and research reports by students and faculty.
- ✘ Development/deployment of tools for information customisation.
- ✘ Imparting information literacy instruction to the users.

5.2 Skills of Information Professionals

Information professionals should possess excellent communication skills, and abilities to offer specialist skills such as expertise in electronic systems and resources or experience of planning and delivering training. They should have skills in persuasion and reasoned argument in a changing and complex organisational environment. The various skills needed by library and information professionals in KM programme are:

- ✘ Interpersonal communication skills for transferring tacit knowledge to explicit knowledge. It also encourages people to identify and share relevant ideas, knowledge and information.
- ✘ General management skills such as leadership, human resources management, change management, project management, etc. are seen as a vital part of KM programme that library and information professionals should have.
- ✘ Information management skills like classification and cataloguing, indexing and abstracting, information consolidation and repackaging, content management, storage and retrieval, construction of controlled vocabulary and thesaurus.
- ✘ Information technology skills like webpage development, database design and management, web publishing, Internet publishing, designing and application of search engines, networking to gather, share and disseminate knowledge.
- ✘ Other skills such as, strategic thinking, writing, teaching and learning skills, presentation skills, skills to convert information into knowledge, and skills to understand KM principles and processes

are also very much essential for KM programme.

5.3 Challenges for Informational Professionals

Following challenges faced by the information professionals retard KM programme:

- ✘ Management of tacit knowledge is not so easy. It is hard to know what is in human mind. It is also difficult to capture knowledge and manage it within a large academic library.
- ✘ People hesitate to share their knowledge because of insecurity and fear of passing their tacit knowledge to colleagues and lose their importance. Overcoming this fear and motivating such people is the biggest challenge of KM.
- ✘ The ever changing pattern of information generates huge amount of information in short span of time. Thus, information gets obsolete as soon as it is generated. Because of this, it is difficult to provide nascent information quickly to the user.
- ✘ If obsolete information is not removed it leads to information overload, which creates problem in identification of useful information.
- ✘ Rapid change in ICT handicaps the librarians to communicate knowledge to the users. Since ICT is an important tool for KM, information professionals need a high level of technical skills in ICT.
- ✘ Financial constraints are there for knowledge sharing incentives. KM should show overall economy.
- ✘ There are so many KM needs, it is hard to know where to start.
- ✘ Lack of up-to-date knowledge as to what is happening in ICT and KM.

6. CONCLUSION

In the recent past KM has emerged as a powerful strategy for enhancing the productivity as well as creating a sustainable competitive advantage for the organisation in the global market. Library and information professionals

can play an important role while managing the explicit knowledge. To achieve this, they need to be equipped with certain additional skills along with the conventional skills. The new role of information professionals is full of challenges and they need to strive hard to be relevant in anticipation of resurgence of the new areas of KM.

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