DESIDOC Bulletin of Information Technology, Vol. 27, No. 5, September 2007, pp. 5-16

Changing Paradigm for Information Professionals in Knowledge Management Age

S. Ganguly

Indian Institute of Management, Prabandh Nagar
Sitapur Road, Lucknow-226 013
E-mail:sganguly@iiml.ac.in

ABSTRACT

Knowledge has become the key driving force in the present day. Gone are the days when organisations and institutions were reluctant and complacent in sharing of information. Today, every organisation has understood the importance of knowledge. Organisations all over the world are utilising technology tools to make their systems more competitive and dynamic. This paper aims to stimulate information professionals to explore the potential impact of Knowledge Management (KM) and also examines the role of information professionals to take the added advantage of KM to improve the effective application of their skills.

Keywords: Knowledge management, information professionals, knowledge workers, LIS professionals, groupware

1. INTRODUCTION

One of the most complex issues facing libraries today is managing change. The decisions libraries make are becoming more complex, the risks are greater, and the resources both human and fiscal are becoming scarcer. There are many key issues facing libraries today that relate to the ability of the library to allocate and make maximum use of these scarce resources[1]. Productivity and innovation are the factors that generate the value. Both of them are applications of knowledge at work. The fundamental social parts of the knowledge society nowadays are the "knowledge workers". The economic challenge of the post-capitalist society therefore will be the productivity of knowledge and knowledge workers. Knowledge means a supreme good for use; knowledge leads to success of social and economic results[2].

As knowledge and information lead to power, the performance of a contemporary organisation is actually proportional to the usage of the communication channels. The implications of knowledge sharing for the new knowledge-based economy are substantial. In a knowledge-based competition, it is generally assumed that organisations have different and unique knowledge, which they use to create sustained competitive advantage. But knowledge sharing allows organisations to access the same basic knowledge, which produces competition. This in turn changes the way that an organisation must operate

Received 12 February 2007, revised 30 May 2007

and the mechanisms for governing transactions in the new economy[3].

The management of information and knowledge has long been regarded as the domain of LIS professionals. Librarians and information professionals are formally trained in identifying, selecting, organising and disseminating information and knowledge to the users. So, with their traditional knowledge and skills, can the librarians be transformed into knowledge managers? However, in order to find an answer to this, it is necessary to understand the processes involved in knowledge management and its similarities with information management.

2. THE D, I, K, W QUARTET

Some of the fundamental issues on what has come to be known as the D, I K, W quartet are:

Data: Is discrete content and does not make much sense by itself.

Information: Is processed and collated data.

Knowledge: Is highly contextualised information enriched with individual interpretation and expertise. In the organisational context, knowledge can also be looked at as information that is tested against the business rules of the organisation and found to be valid by knowledgeable individuals and is therefore elevated to a level of validated information or knowledge.

Wisdom: Is in a different realm altogether profoundly born out of intuition, and deep insight being the key pre-requisites. Clearly, it would be sacrilege to even suggest that it is something that one can "manage". So, while people can talk with great verve about data and information management, and now about knowledge management, wisdom, one would feel is best left in its pristine state, untouched by automated efforts to manage it. At best it can be shared, but that is not within the scope of our current discussions.

Data is the entity with the least amount of confusion. Everyone understands it and is comfortable dealing with it. The information and knowledge are often understood, interchangeably used, and have been the topic of a lot of debates and discussions.

Most organisations attempting a KM solution often find it difficult to differentiate information from knowledge. A useful differentiator as described by John Seely Brown is that while information is fundamentally dis-embeddable and therefore transportable and re-embeddable, knowledge is not. Knowledge lives in its context. Therefore, it is possible to dis-embed information from one place and use it elsewhere; however, it would not be possible to dis-embed a piece of knowledge unless it is lifted with its context intact.

3. DEFINING KNOWLEDGE

The widespread attention now paid to knowledge issues makes it important to be precise about the basic understanding of knowledge[4]. Because of its intangible and fuzzy nature, defining knowledge precisely is difficult. What is knowledge for one person may be information for the other. The definition of knowledge according to Webster's New Encyclopedia Dictionary is:

(i) Understanding gained by actual experience (like knowledge of carpentry).

(ii) The state of being aware of something or of having information or range of information awareness.

(iii) The act of understanding; clear perception of truth.

(iv) Something learned and kept in mind.

Knowledge has also been defined as core competency, which is based on collective learning of an organisation. This involves knowing how to coordinate diverse operational skills and integrate them with multiple strains of distinctive capabilities[5]. According to Tom Peters: "Knowledge is not the technical accumulation of information. The crucial factors are the format of the information, the credibility of the information, the zippiness of the information, the degree to which it's attached to credible people and instant availability"[6]. According

to Chaudhary[7], the term knowledge in itself consists of three elements: Know, Learn, and Edge as shown in the Fig. 1.

But, in the present environment, the use of these traditional methods has become a liability, as these methods have not been found to offer competitive advantages to the firms[5,8]. Despite the difficulties in defining knowledge, it is well agreed that knowledge is an organised combination of ideas, rules, procedures, and information. To manage knowledge efficiently, an organisation needs a highly flexible and adaptable organisational structure. Prahlad and Hamel suggests that in the present environment, organisations should structure on the basis of their core competence, inherent dynamics, and flexibility to sustain high level of environmental uncertainty and chaos[5,9]. Knowledge management is thus a process of facilitating knowledge-related activities such as creation, capture, transformation, and use of knowledge[10]. The KM process includes a range of activities ranging from learning, collaboration, and experimentation to integration of diverse sets of tasks and implantation of powerful information systems, such as Internet, Intranets and Extranets.

3.1 Tacit and Explicit Knowledge

Nonaka and Takeuchi[8] have described following processes for the conversion of tacit and explicit knowledge, which they believe are crucial to create value:

Tacit to tacit (socialisation): Where individuals directly share and test the knowledge.

Tacit to explicit (externalisation): The transformation of knowledge into a tangible form through documentation or discussion.

Explicit to explicit (combination): Combining different forms of explicit knowledge such as documents or databases.

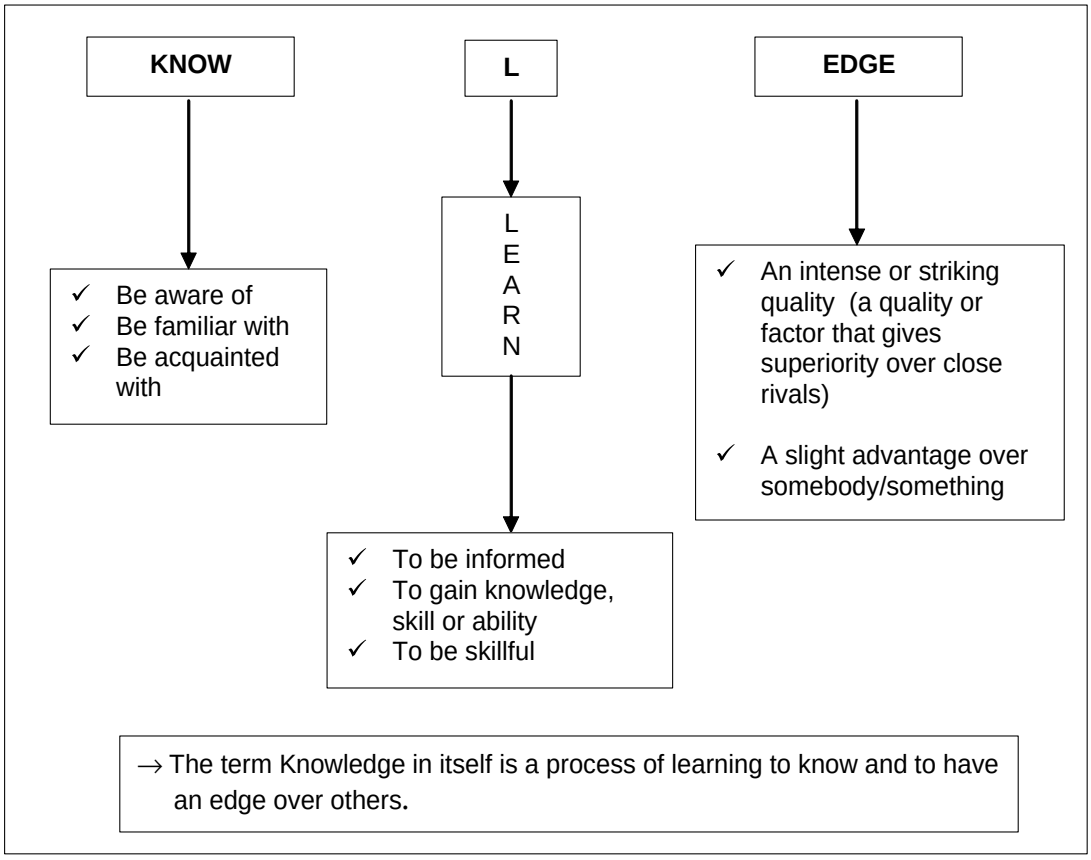


Figure 1. Three vital components of knowledge.

Explicit to tacit (internationalisation): Where individuals internalise knowledge from documents, discussion or learning into their own body of knowledge.

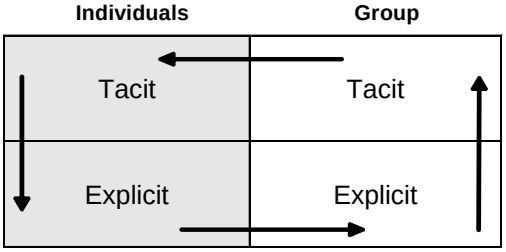
These ideas are being widely used by different knowledge workers depending upon their working environment.

3.1.1 Tacit to Explicit

In this model, activities on the left side – those that focus on converting tacit knowledge into explicit knowledge–include processes for:

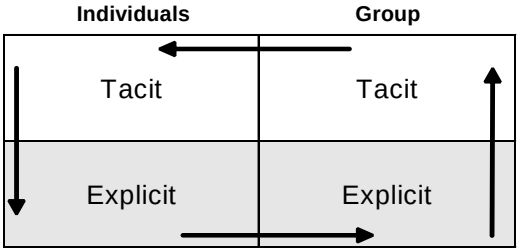
- Building databases that share best practice
- Directories (yellow pages) of skills and expertise
- The formal gathering and integration of knowledge about customers, competitors, market environments, and product development
- Intellectual assets management
- Mapping and signposting knowledge

Consultancy firms such as PriceWater House Coopers (PWC) focus many of their KM activities on building explicit knowledge bases, together with cultural change activities oriented towards improving consultants' ability and willingness to record and reuse what they have learnt on assignments.



3.1.2 Explicit to Explicit

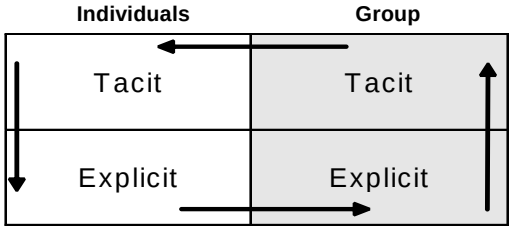
The technology axis focuses on access to explicit knowledge and the facilitation of communication between individuals, resulting in the development of Intranets, portals and



communications platforms to facilitate the exchange of knowledge with sophisticated functionality.

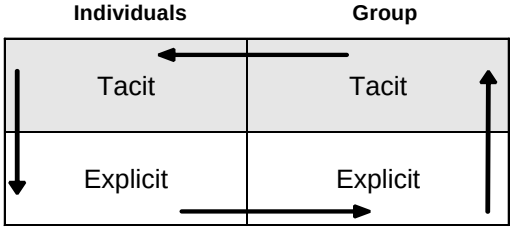
3.1.3 Explicit to Tacit

Dow Chemicals started its approach to KM by taking stock of its patents–its intellectual assets–designing processes that identified what assets they owned, whether they were being used, which had potential for additional exploitation, and how that could be realised. The initiative increased revenue manifold.



3.1.4 Explicit to Tacit and Tacit to Tacit

Approaches on the right and at the top of this model focus on sharing, nurturing, and building tacit knowledge and are primarily concerned with facilitating interaction between people and the development of partnerships, networks, and communities of interest. This include spaces and facilities designed to encourage both formal and informal conversations, ways of sharing best practice and lessons learned through discussions, master classes and stories, and also through individual development and learning.



4. KNOWLEDGE MANAGEMENT

Knowledge management is particularly concerned with tacit organisational knowledge and various non-typical valuable information resources to the users as to the hierarchy and structure of the organisation. Knowledge management processes follow best practice procedures and benchmarking when a range of collaborating organisations use them.

As knowledge is increasingly becoming the key strategic resource of the future, our need to develop a comprehensive understanding of knowledge processes for the creation, transfer, and deployment of this unique asset is also becoming critical. Facing the challenges of a globally expanding and highly competitive knowledge-based economy, the traditional organisations are urgently seeking the fundamental insights to help them nurture, harvest, and manage the immense potential of their knowledge assets to provide the capability to excel at the leading edge of innovation[11].

Librarians have developed and applied many KM principles with regard to academic library services. However, they have done little to use organisational information to create knowledge that can be used to create further knowledge and to improve the functionality and higher educational processes. In many ways, KM incorporates principles that academic librarians have developed and used with scholarly information for many years. They have applied these principles and others to organisational information in ways that create new knowledge to improve organisational effectiveness[1].

Chase[12] found that KM has the following benefits which can be applied in libraries:

- Improved decision making (89 per cent)
- Increased responsiveness to customers (84 per cent)
- Improved efficiency of people and operations (82 per cent)
- Improved innovation (73 per cent).
- Improved products/services (73 per cent).

Knowledge and KM play a significant role in securing the cooperation. Trans-organisational sharing and exchange of knowledge serves as the foundation for the development of trust and relationships. The concept of social capital is useful in understanding how to build and maintain the relationships, which are necessary to achieve high-order innovation in cooperative, and knowledge-driven business environment[3].

Libraries will gradually become more and more independent from their respective organisations because of the interdependence on user services, resource sharing through cooperation, coordination, and because of change in the culture which will enable managers and employees at every hierarchical level to make decisions in common.

The KM in this context involves the entire system of knowledge transfer from the generation, construction, diffusion and use. This will require librarians to go beyond their contemporary role of knowledge storing, organisation, retrieval, and access to the global transformation and creation of information. This is a challenge and an opportunity for librarians to move their activities, and to enlarge their sharing to the scholarly communication process[13]. Anyone working in the field of knowledge and information management will require a range of skills, some of which can be grouped in the following categories related to knowledge and information management[14]:

- Knowledge of sources: Print/electronic, internal/external, whom to ask, how to look, its evaluation
- Subject knowledge and understanding.
- Information and records management: Indexing and abstracting methods, database development, thesaurus construction, retrieval/ delivery methods, electronic storage, retention policy, structuring records, legislation, standards and controls
- Internal and external networks

- Users/patterns of usage: Needs analysis, satisfaction measures
- Current awareness services: monitoring/ updating, abstracting news services
- User advice and training
- Contribution to knowledge and information strategy.

Knowledge management is one way to develop and apply the organisational knowledge needed to improve library operations and, ultimately, library effectiveness. It also enables libraries to generate organisational knowledge for higher education institutions[15].

5. WHY KM?

According to Sharma[16]: To serve clientele well and remain in business, companies must reduce their cycle time, operate with minimum fixed assets and overheads (people, inventory and facilities), shorten product development time, improve customer service, empower employees, innovate and deliver high-quality products, enhance flexibility and adaptation, capture information, create knowledge, and share and learn knowledge. None of these are possible without a continual focus on the creation, updation, availability, quality and use of knowledge by all the employees and the teams at work and in the marketplace.

6. THE CORE PROCESSES OF KM

Heisig has outlined the following key processes involved in KM:

(i) Create new knowledge: Measures and instruments that promote the creation of knowledge are, for example, the acquisition of external knowledge (mergers, consultants, etc.), the setting up of interdisciplinary project teams that include the customers, and the application of lessons learned and methods to elicit tacit knowledge.

(ii) Store knowledge: Store knowledge in manuals, databases, case studies, reports, and the tacit knowledge of the employees who work in the organisation.

(iii) Distribute knowledge: Provision of right knowledge to the right person at the right time is the main aim of the core task 'distribution of knowledge'. Internet and Intranets can play a crucial role in achieving this objective. Other aspects of the distribution of knowledge are the transfer of experiences of new employees by training on-the-job, mentoring, and coaching techniques.

(iv) Apply knowledge: Appropriate application of knowledge for the benefit of the organisation is the fundamental aim of the KM.

7. KNOWLEDGE SOLUTION MODELS

The most common phenomenon we come across is the typical D, I, K, W quartet, a linear transformation model as depicted in Fig. 2. But according to Natarajan and Shekhar[17], it can be divided into two models—independent knowledge solution model and information to knowledge transformation model.

7.1 Independent Knowledge Solution Model

A knowledge solution can very well be created without automating all the underlying information layers. There is really nothing like a mandatory chronology to be followed for implementing KM solutions. A major misconception that a number of people have is that unless an organisation has traversed the path of implementing IT solutions, it cannot be ready for KM. While it certainly helps if people are technology savvy, the existence of automated applications for information processing is not always a pre-requisite. For example, Medical Helpline Service using videoconference facility to operate a critical case does not require any information system in action. That is what is defined as independent knowledge solution model.

7.2 Information to Knowledge Transformation Model

Several companies have successfully managed to implement KM solutions through information systems foundation. Knowledge generation in such cases, pretty much follows

the linear transformation as depicted in Fig. 2.

In all these solutions, knowledge as an entity sits on top of the D, I, K pyramid. Efficiently designed IT systems that automate the end-to-end process chain in any organisation act as the acquisition mechanism within which knowledge is often embedded.

Knowledge solutions, interfaced to these systems, then attempt to enhance the quality of information through expert analyses to transform them into knowledge. They also identify packets of embedded knowledge within the information layers through sophisticated business-intelligence tools. These solutions fall under this category.

Should an organisation choose either one model or the other, or both, and if so, in what order; are there other parameters like level of IT maturity, culture and investments that plays a role? While the independent model strives to create a connected environment for both people-to-people interaction and for knowledge sharing, the transformation model establishes the vertical connection between people and information systems for knowledge extraction.

If the requirement is for tacit knowledge or experience to be available or shared, the independent knowledge solution is generally suitable. On the other hand, if it is explicit knowledge that is required, then the transformation model is more appropriate.

8. KNOWLEDGE TECHNOLOGIES AND KNOWLEDGE SHARING

8.1 Technology Aspect

There are a large number of technology tools which support the entire KM endeavour. A KM tool utilises technology tools from standard off-the-shelf e-mail packages to sophisticated collaboration tools designed specifically to support community building and identity. Generally, tools fall into one or more of the following categories:

- Knowledge repositories
- Expertise access tools
- e-learning applications
- Discussion and chat technologies
- Synchronous interaction tools
- Search and data mining tools.

Selecting an appropriate tool is a critical issue. A wrong technology is not just a financial loss but it also creates bottlenecks for the entire system, affecting the productivity of the knowledge employee.

8.1.1 Corporate Intranet

One of the hottest technologies for knowledge sharing is corporate Intranet. The Intranet has the potential to be a valuable strategic asset for an organisation. A well-

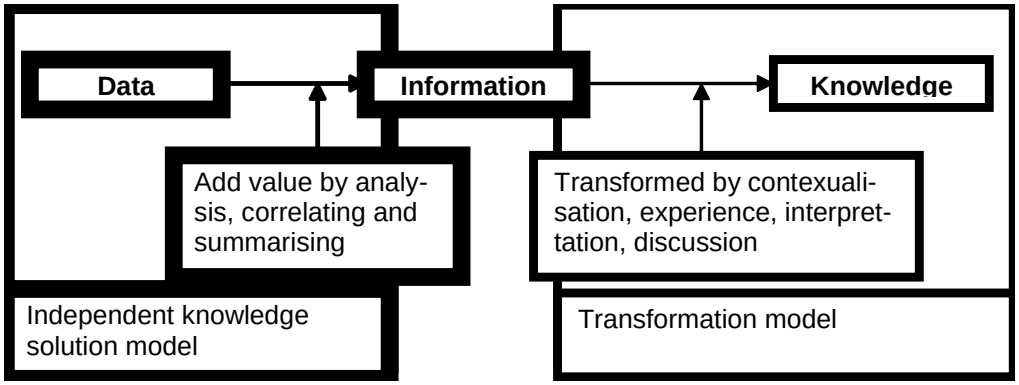


Figure 2. Linear transformation model.

designed corporate Intranet acts as a single interface across the entire enterprise. It also acts as a centralised pool of knowledge. It is an effective communication infrastructure through which knowledge workers can exchange their ideas.

Intranet can thus act as a supporting tool for initial and ongoing training requirements of an organisation. It is also a platform for an online community of staff, particularly for those in geographically isolated locations to remain in contact with their organisation. Pankaj has enumerated some successful tips for implementation of corporate Intranet to address the following issues:

- Review of existing Intranet, if any, or the options available in the market
- Determine Intranet goals. What kind of value it will reflect to the organisation
- Identify stakeholders—current users and future users
- Cost implications involved in it
- How it is going to be integrated with the present system so that it generated the maximum benefits
- Awareness and capacity building of the stakeholders for an effective usage of Intranet.

Once the above issues have been addressed, following key points will arise for implementation of a corporate Intranet:

- Usability study and stakeholders feedback
- Prototype development and pilot testing
- Content audit
- Development of Intranet design
- Migration of the existing content
- Promotion of the Intranet among stakeholders
- Intranet security issues.

8.1.2 Groupware

In the past few years, the learning organisation concepts have shed new light in this field. Groupware encompasses a set of functions designed to help members of a group with tasks of interest to the group as a whole. Electronic mail, database, shared document databases, and electronic forums are the components of a groupware solution. Groupware does more than provide economies of time and space: it also encourages group members to pool their knowledge and experience, resulting in thorough information processing and better decision making at a reasonable cost.

Groupware technology is designed to facilitate the work of groups and may be used to communicate, cooperate, coordinate, solve problems, and compete or negotiate. While traditional technologies like the telephone qualify as groupware, the term is ordinarily used to refer to a specific class of technologies relying on modern computer networks such as e-mail, newsgroups, videophones, or chat. Groupware is both software and group process. It can both enhance a group, and productively insulate members from the group. It offers significant advantages over single-user systems. Some of the most common reasons people want to use groupware are:

- Faster, clearer, and more persuasive communictation
- Communication possible even in remote areas
- Enables telecommuting
- Cuts down travel costs/business logistics
- Creates a sharing platform
- Forms common interest groups
- Saves time and cost in coordinating group work
- Facilitates group problem-solving
- Enables new modes of communication such as anonymous interchanges or structured interactions.

Groupware helps to bring experts together quickly so that they can pool their knowledge and with the right guidance, work effectively. Following are some of the areas in which groupware has generated significant benefits:

- Collaborative research which brings teams from different organisations and locations closer for innovative research
- Faster development of new products and services soliciting inputs from the users
- More innovative products and services for closer dialogue between different functions and experts
- Better matching products and services for ongoing dialogue with customers based on their needs and satisfaction
- Better market planning for closer interaction between the creators and the users of marketing programmes
- Market development for cleaner identification of target markets through shared interests group
- Improved customer service for access to information about common and industrial problems.

8.2 Knowledge-sharing Challenges

Success of the next generation of the KM systems will depend upon integration of not only data and processes across inter-enterprise supply chains and value chains, but also integration of decision-making and actions across inter-enterprise boundaries. This integration is in fact the most critical aspect of the entire system. Lack of proper integration was one of the major reasons for the failure of earlier KM systems. Effectiveness of integrated information flows will depend upon the accuracy of information that is shared by diverse stakeholders across inter-enterprise boundaries.

9. KNOWLEDGE MANAGEMENT WITHIN LIBRARIES

Knowledge management is not a phrase that is routinely used within libraries. Many consider KM to be primarily a business activity in which the use and reuse of knowledge creates business value in terms of profits, improved returns on investment or some other quantitative measure. Although librarians may not choose to take on a new title such as "Knowledge Managers", there is considerable opportunity for librarians to use their traditional skills to assume a new function of managing knowledge within the library, which would complement the traditional library services. Both Kim[18], and DiMattia and Oder[19] have stressed the importance of the KM role of librarians. In a large multicampus university library operations are as complex and distributed as in many business enterprises. In this context, KM can help transform the libraries into more efficient, knowledge-sharing organisations. To adapt a working definition from industry, KM within libraries involves organising and providing access to intangible resources that help librarians and administrators carry out their tasks effectively and efficiently[20].

An example will help to illustrate the application of KM within a library. In most large public and academic libraries, a librarian typically has a subject speciality, and is highly skilled at using various indexes and databases in that subject area to help users find scholarly material. With the assistance of librarian, the user can obtain information on a particular subject and hopefully, transform this information into knowledge that can be applied to a specific problem. In providing this classical library function, the librarian uses a variety of approaches and tools including commercial databases, formal guides, informal finding aids, personal notes, and much information that is typically found only in the librarian's mind. In an ideal KM framework, the librarian would organise these aids, notes, and tacit knowledge so that other librarians could benefit from the knowledge. This type of KM function can improve the productivity and efficiency of a library by not having to depend totally on one person's specialised knowledge.

9.1 Academic Libraries and Knowledge Management

Stoffle considered that KM should be seen as primary function of academic libraries:

within the scholarly communication and information delivery processes, libraries could add value by organising knowledge created and packaged outside the library. For Stoffle, KM is an effective, project-based means of organising and making available information and knowledge to users of the academic library rather than an attempt to change corporate or organisational culture. Lucier[13] stated that the scholarly publishing aspect of librarianship is a crucial element of KM, arguing further that libraries have been developed from the pre-occupation with knowledge use through knowledge access, to knowledge generation, in the wake of developments in electronic publishing.

KM provides a means of adding value for the university as a whole in terms of being able to publish electronically knowledge created at the institution; it is not desirable, but vital, that the academic community should see the library as a publisher, a knowledge creator. Marshall described librarians as major facilitators of the positive sharing of knowledge, and someone who creates the culture and maintains the necessary infrastructure for the operation of KM. Creth too stressed the need for librarians in universities to raise their own profiles as an integral part of the university teaching and research team[21]. They should be seen to be adding value to the process of education and knowledge creation.

9.2 Librarians as Knowledge Managers

Librarians with their traditional knowledge and skills can manage the explicit knowledge quiet well. But the challenge is in developing systems and procedures for managing the tacit knowledge. Although LIS professionals are not always prominently involved at the outset of KM initiatives, many organisations have brought them in at a later stage, when ongoing management of content usually emerges as a major technical issue.

9.2.1 Role of LIS Professional in KM Environment

Librarians can find themselves in the following role in KM environment:

- KM developers: Librarians can work very closely with the senior management team for developing systems and procedures for implementing an effective KM system in their respective organisation
- KM researchers: Librarians are in a better position to apply the LIS principles to create new KM systems. Their knowledge in taxonomies, metadata, information retrieval techniques, thesauri, etc. together with the digital technologies can play crucial role in a KM environment
- KM integrators: A librarian can act as one who connects the information sources, services, and people in an organisation[22]
- Knowledge brokers: Often known as gatekeepers, they connect knowledge seekers with knowledge providers[23]. Librarians normally act as knowledge brokers in an organisation since they know better than others where someone can look for a particular information. In the course of their work, they come to understand a great deal about the various knowledge needs and knowledge resources of the organisation.

9.3 Information Management Skills for KM Strategy

Traditional information management (IM) skills of librarians can readily be applied in a KM environment. Some of these skills identified by Abell and Oxbrow[24] are:

- Identifying and acquiring internal sources
- Structuring internal sources
- Sourcing, acquiring and evaluating external sources
- Integrating internal and external sources
- Enabling timely delivery of relevant and usable information.

9.4 Application of IM Skills for KM Strategy

Librarians can apply their IM skills in the following KM areas:

Designing knowledge repositories (explicit knowledge): Storing informal information such as marketing materials, meeting minutes, price lists, training packs, research reports, etc.

Designing knowledge maps (tacit and explicit knowledge): Pointing to people, document collections and datasets that can be consulted.

Designing knowledge networks and discussion groups (tacit knowledge): Providing opportunities for face-to-face contacts and electronic interactions, for example establishing chat facilities/talk rooms, etc.[25]

10. CONCLUSION

In the present fast changing knowledge environment, organisations have seen a major paradigm shift. In this perspective, knowledge is considered a key resource, but there are still a large number of libraries and their information professionals who have to incline towards KM. They still need to know how to manage and disseminate knowledge to external and internal environment.

To take advantage of KM, information professionals need to fully understand the concepts and benefits, the different approaches and techniques being implemented, and the new emerging roles in which information is increasingly significant. People may develop an idea that, in their point of view, may be useful for a business organisation only, but it still can be useful for other organisations also. These techniques and approaches are so vast that only a miniscule part of it has been discussed in this paper.

REFERENCES

1. Hirshon, A. Libraries, consortia and change management. *J. Acad. Librarianship,* 1999, **25**(2), 124-26.

2. Drucker, P. Post-capitalist society. Gutenberg, Germany, 1996.

3. Carayannis, E.G., *et al.* Leveraging knowledge, learning and innovation in forming strategic government-university-industry (GUI) R&D partnerships in the US, Germany and France. *Technovation,* 2000, **20**(9), 477-88.

4. Krogh, Geog Von & Grand, Simon. Justification in knowledge creation: Dominant logic in management discourses. *In* Knowledge creation: A source of value, edited by Krogh, Nonaka and Nishiguchi. Macmillan Press Ltd, London, 2000.

5. Prahlad, C.K. & Hamel, G. The core competency of the corporation. *Harvard Business Review,* 1990, **68**(3), 79-93.

6. Peters, Tom. Liberation Management. Pan Books Ltd, London, 1993.

7. Chaudhary, H.C. Knolwedge management for competitive advantage: Changing the world through knowledge. Excel Books, 2005. 161p.

8. Nonaka, I. & Takeuchi, H. The knowledge creating company: How Japanese companies create the dynamic of innovation. Oxford University Press, Oxford, 1995.

9. Nonaka, I. A dynamic theory of organisational knowledge creation. *Organisation Science,* 1994, **5**(1), 14-37.

10. Bhatt, G. Organising knowledge in the knowledge development cycle. *J. Know. Manage*., 2000, **4**(1), 15-26.

11. Shariq,S.Z. Knowledge management: An emerging discipline. *J. Know. Manage.,* 1997, **1**(1), 75-82.

12. Chase, R.L. The knowledge-based organisation: An international survey. *J Know. Manage.,* 1997, **1**(1), 38-49.

13. Lucier, R. Knowledge management: Refining roles in scientific communication. *In* New Technologies and New Directions: Proceedings from the Symposium on Scholarly Communication, edited by Boynton G.R. and Creth, S. D. Meckler Publishing, Westport, CT, 1993.

14. Webb, S.P. Knowledge management: Linchpin of Change. Aslib, London, 1998.

15. Townley, C. T. Knowledge management and academic libraries. *College Res. Lib.,* 2001, **62**(1), 44-55.

16. Sharma, P. Knowledge management. APH Publishing Corporation, New Delhi, 2004.

17. Natarajan, G. & Shekhar, S. Knowledge management: Enabling business growth. Tata McGraw-Hill Publishing Co Ltd, New Delhi, 2000.

19. Di Mattia, S. & Oder, N. Knowledge management: Hope, hype or harbinger?" *Library Journal,* 1997, **122**(15), 33-35.

18. Kim, S. The roles of knowledge professionals for knowledge management. *Inspel,* 2000, **34**(1), 1-8.

21. Creth, S.D. The electronic library: Slouching toward the future or creating a new information environment. Available at www.ukoln.ac.uk/services/papers/follett/creth/paper.html.

22. Blair, D.C. Knowledge management: Hype, hope or help? *J. Ameri. Soc. Inform. Sci. Technol.,* 2002, **53**(12), 10-20.

23. Davenport, T.H. & Prusak, L. Working knowledge: How organisations manage what they know. Harvard Business School Press, Boston, 1998.

24. Abell, A. & Oxbrow, N. Competing with knowledge: The information professional in the knowledge management age. Library Association Publishing, London, 2001.

25. Corall, S. Are we in the knowledge management business? Available at http://www.ariadne.ac.uk/issue18/

Contributor

Mr Shantanu Ganguly has done MSc in Ecology and Environment Science, Master's in Library and Information Science, Postgraduate Diploma in Management, and Postgraduate Diploma in Computer Application. He has served several reputed organisations such as Delhi University, VHAI, National Productivity Council, TERI, and IILM. Currently he is working in the Indian Institute of Management, Lucknow. He has 16 years of experience in the field of library and information services. He has also served as Associate Editor for several reputed national journals and newsletters.