Abstract: Libraries can play a crucial role in the extension and modification of knowledge. Simultaneously, the growing need for knowledge management has influenced every component and operation of a modern academic library. Knowledge management is concerned with the exploration and development of the knowledge assets of an organization with a view to furthering the institution’s goals. Therefore, in the present context, it is necessary that academic libraries will need to change and adopt knowledge management to provide innovative and need-based library services.

This paper intends to provide an overview of knowledge management in terms of its relevance to academic libraries. The paper mainly focuses on Definitions of KM, Need of Knowledge Management in Academic Libraries, Tools for Knowledge Management, Knowledge Management process, Knowledge Management in Academic Library Operations and Knowledge Management competencies required among library and information science professionals.

Key words: Implicit knowledge, Explicit knowledge, Knowledge Management

1. Introduction

Knowledge is an expensive commodity; if it is managed properly, it becomes a major asset to the modern library. Knowledge is a product of human experience and it is the only source of competitive advantage for an organization. Knowledge can be broadly divided into two types—i.e., tacit (implicit) and explicit. Tacit knowledge is a complex form of knowledge which has two dimensions—namely technical and cognitive. This is personal knowledge, which is embedded in human mind and difficult to formalize and also difficult to communicate. Whereas, explicit knowledge is formal and easy to communicate to others. It is the knowledge of rationality, for instance, it may include policies, rules, specifications, and formulae, etc. It is also known as declarative knowledge.

However, Knowledge management is concerned with the exploitation and the development of the knowledge assets of an organization with a view to furthering the institution's goals. Knowledge management embraces all the process associated with the identification, sharing, and creation of information. Knowledge management (KM) is a newly emerging approach aimed at addressing today’s business challenges to increase efficiency and efficacy by applying a variety of strategies, techniques in the business processes. Although the business model of KM is now being adopted by many non-profit organizations such as libraries, where several kinds of knowledge need to be managed like:

- users knowledge (their need, whom to contact and information seeking);
- resource knowledge (sources and services, where these services are available and other features of resources); and
- Personnel practice knowledge (expertise available, the quality of service they provide and others).

Moreover, KM can help improve communication among library personnel and users, between top management and staff and can promote a culture of knowledge sharing.

At present academic libraries are facing a number of challenges, including unsustainable costs, declining usage, transition into digital services and increased demands for new services. The libraries must develop their strengths, and innovate responsive and convenient services. Therefore
libraries will need to adopt KM to provide innovative library services. This becomes even more pertinent in the age of connectivity, mobile usage, huge digital data, and an increasing mix of digital and physical world, where knowledge is not just managed by a library (books or periodicals) along with rapidly evolving technology.

KM in libraries can improve communication among staff/management, and promote a culture of sharing. It can make libraries more effective by enabling user-focused solutions and eliminating redundant procedures. The present study explores the implementation of KM in academic libraries through various tools and techniques for the effective library practices.

2. Review of literature

Md Roknuzzaman describes the ways of knowing and degrees of understanding of KM concepts among the library practitioners are varied. But the most library practitioners have focused on a shallow perception of KM for its incorporation into library practice dealing with only explicit information and/or knowledge. He also finds some of the reasons for responding to KM, e.g. increasing value of knowledge in the knowledge economy, role of information technologies, opportunities for improved library practices. Maryam Sarrafzadeh discusses the LIS community exhibits a positive attitude towards introducing KM to libraries, and not only because this could bring libraries closer to their parent organization, it might help them to survive in an increasingly challenging environment. Although there are some indicators of involvement of libraries in KM in published case studies through activities such as development of intranets and institutional repositories of content management and embedding information literacy instruction in the curriculum. Mohammad Nazim describes a minor difference in the mean scores of five categories of competencies, but all the competencies were validated as needed. However, the development of competencies in the field of management by LIS professionals is the most essential requirement for effective application of KM in Indian academic libraries. Competencies validated by the professionals may be used as the groundwork for evaluation of current LIS educational programmes and revision of LIS curricula to impart a wide range of competencies to LIS students for working in KM environment. Branin describes how the Ohio State University Library took a broad and evolutionary approach to KM by responding to new types of digital information assets created on campuses and among individual faculty and student. White discusses an effective knowledge acquisition culture. He focussed on mentoring of new staff, monitoring of intangible assets, etc. Despite limited implementations and varying perceptions of the library and information science (LIS) community toward KM has positive view and call for full involvement of LIS practitioners in KM. Islam and Ikeda describes the hurdle in KM implementation in libraries is a lack of clear knowledge as to how to implement KM. Which tools and technologies need to be adopted? What are the set of processes and phases involved? Each organization must come up with its own template for what is best suited to its needs.

Reviewing the literature reveals that the academic libraries have welcomed the challenges and opportunities of knowledge management for their improved library practices.

3. Definitions

- According to Srinivasan, “Knowledge Management refers to a collection of process, technologies and principles that serves to promote a learning environment supportive of the search community goal.”
- Ron Young, CEO/CKO, and Knowledge Associates International defines “Knowledge Management is the discipline of enabling individuals, teams and entire organization to collectively and systematically create, share and apply knowledge to better achieve their objectives.”
- According to Knowledge Management Server, Knowledge Management is the systematic process of finding, selecting, organizing, distilling
and presenting information in a way that improves an employee’s comprehension in a specific area of interest.

4. Need of Knowledge Management in Academic libraries

The needs of knowledge management in academic libraries are as follows:

1. Knowledge being the strategic and key resource of an organization likes academic libraries.
2. The threat of being marginalized by internet based information services and students and faculty’s own information gathering efforts.
3. To fulfilment of dream of library professionals and mission of the academic libraries and their parent institution, that is, to provide right knowledge at the right time to the right person in the right format.
4. Quitting job by potential workforce lead to loss of valuable organizational knowledge.
5. Reduced budget, increased demand from the faculty and students and greater expectation from higher administration.
6. Products and services are increasingly becoming complex and they demand new skill set and competency
7. Technological advancement and rate of innovation is rising.
8. The need for lifelong learning is an inescapable reality.

5. Tools for Knowledge Management

Key types of knowledge related tools are given below which is effective in managing and handling knowledge and thereby maintaining the knowledge base organization. Intranets/Extranets - An intranet is a private network, accessible only to an organization's staff and an extranet is an extended intranet. In addition to allowing access to members of an organization, an extranet uses firewalls, access profiles, and privacy protocols to allow access to users from outside the organization.

- Electronic Document Management - the management of different kinds of documents in an enterprise using computer programs and storage.
- Data Analysis Data Warehousing - Analysis of data is a process of inspecting, cleaning, transforming, and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making.
- Help Desk Technologies - A help desk is a resource intended to provide the end user with information and support related to an institution's products and services.
- Mapping Tools - The Mapping Tools are an open-source collection of computer software tools for processing and displaying datasets.
- Machine learning - Machine learning is a subfield of computer science that evolved from the study of pattern recognition and computational learning theory in artificial intelligence.
- Workflow management systems - It is a software that provides an infrastructure to setup, execute, and monitor scientific workflows.
- Groupware - It is application software designed to help people involved in a common task to achieve goals.
- Information Retrieval Tools – The open source text mining tools to obtain information resources relevant to information need from a collection of information resources.
- Portals - Technological doorways that connects points of access to information over the Internet
- Agent Technologies – These allows automate ordering process according to pre-determined inventory levels or to search for information materials on the internet.
- Ontology’s - Ontology is a formal naming of the types, properties, and interrelationships of the entities that really or fundamentally exist for a
6. Knowledge Management process

Most organizations focus primarily on one or the other of two broadly defined KM strategies “codification” or “personalization.” Codification is primarily implemented in the form of electronic document systems that codify and store knowledge and permit its easy dissemination and re-use. This strategy is based on “reuse economics” invest once in creating or acquiring a knowledge asset and reuse it many times.

Personalization, on the other hand, focuses on developing networks to facilitate people to people knowledge transfer and sharing. It is based on “expert economics” channelling individual expertise to others with less expertise that may employ it to further the organization’s goals. There are six important steps in KM process as shown in the figure.

![Figure 1: Process of Knowledge Management](image)

1. Collect: Search and collect basic information from various sources.
2. Use: Use and exploit the collected information to client’s request.
3. Enrich: Gather additional information and enrich the deliverable with more insights to increase its added value.
4. Share: Sharing of knowledge and insights with other members of the organization
5. Access: Access future information and knowledge needs to fit the organization’s strategy
6. Build: Build extra knowledge on important topics and divest obsolete knowledge

7. Knowledge Management in Academic Library Operations

Knowledge management is being used to improve library operations. Special libraries have taken the lead, but some applications now are taking place in other libraries including academic libraries.

- **Acquisition Section**: Acquisition of knowledge through the identification of existing resources, creation of new knowledge, conversion of knowledge from traditional to digital format, and gathering resources from the web, etc.
- **Technical Section**: Organization or classification of knowledge building by converting tacit knowledge to explicit knowledge in a usable form, and by providing means of codifying, categorizing, indexing, and accessing explicit knowledge.
- **Storage and retrieval / Cataloguing of knowledge in the organizational repositories for preservation as well as multiple uses through the application of a number of retrieval tools and techniques.**
- **Circulation section**: Dissemination of knowledge by means of different approaches and services that facilitates practicing, sharing, applying, utilizing, and using knowledge in libraries.
• **Reference Services:** QuestionPoint: QuestionPoint is a virtual reference service, often referred to as a Virtual Reference Desk (VRD). It is supported by a global network of cooperating libraries worldwide, and comprised of the following features:

  1. **Chat** - a web-based feature that includes an instant messaging component that allows librarians to communicate with patrons in real time. There is also a co-browsing aspect which facilitates the sharing of electronic files or websites.
  2. **Email** - This feature is used to respond to patrons on a serial base. Patrons submit their request and responses are sent at a later date.
  3. **Reporting tools** - This feature can help the librarian manage both online and in-person reference transactions. Statistical reports based on the type and level of the reference activity could aid the librarian in making management decisions, demonstrate trends for funding proposals and measure library user satisfaction levels.
  4. **Tracking** - Librarians are able to track, file and manage the web-delivered questions from patrons.
  5. **Knowledge base comprised of questions and answers from transactions** - There is a local database as well as a global database. The content of the local database is based on local questions and answers, while the content of the global database is a database of questions and answers, added by member libraries. Both databases are searchable by subject or keyword. Each library can maintain a local Knowledge Base controlled by the subscribing library or library group. Libraries can also contribute to (and use) the Global Knowledge Base, a resource for reference support and discovery work, cooperatively built by all QuestionPoint members.
  6. **Feedbacks:** The process of receiving responses from the knowledge consumers as regard to the extent of satisfying their knowledge needs.

**8. Knowledge management competencies required among library and information science Professionals**

According to Khoo, traditional skills of LIS professionals are still in demand, but these skills have to be expanded to handle new digital formats and the online (especially internet) environment to use new metadata schemes and cataloguing of digital and internet resources. Bishop points out that managing knowledge in academic libraries requires a mix of technical, organisational and interpersonal skills. There are five important competencies required among library and information science professionals in the development of knowledge management environment.

1. **KM culture competencies:** Team work skills, skills for fostering knowledge sharing and learning environment, skills to motivate employees etc.
2. **Management competencies:** HRM skills, project management skills and leadership skills, Knowledge about marketing and publicity of information products and services.
3. **Interpersonal competencies:** communication and mentoring skills, interviewing skills, judgment and evaluation skills, presentation skills.
4. **Leadership and strategic competencies:** ability to develop social networks or communities of practice and ability to develop performance-based reward system, ability to link knowledge with strategic results, ability to develop KM policy and skills to create value from organisation’s knowledge-based assets
5. **IT competencies:** Competencies of design and development of web-based content for online use, development of web-based portals or subject gateways and use of digital library software to create institutional or knowledge repositories, design and maintenance of in-house databases and expertise to evaluate performance of information systems

**9. Conclusion**

The primary objective of academic institutions of higher education is advancement of learning and acquisition of knowledge. Academic libraries are part of the university and its organizational culture. Whatever affects universities also has an impact on their libraries too. As a result the role of University/College libraries is changing to provide the competitive advantage. In academic libraries, knowledge management proves its usefulness not only in the context of the growing volume of information available, but also in the context of the changes in the higher education. The processes
of knowledge generation and exploiting are enhanced by knowledge management systems.

Knowledge management can be effectively applied to library strategic planning in numerous areas including planning information services, strategic thinking, policy making and decision making. It should be used as a portal for both internal and external information to link library patron groups, research groups and publications. Benefits of this application include an effective means of sharing both internal and external information, which will reduce redundant efforts and lessen the reporting burden.

Library practitioners need to broaden their understanding, change traditional mindset, and to apply a holistic approach of KM system design and library practice focusing on both explicit and tacit knowledge. They should renovate existing library environment and promote knowledge-sharing culture by the initiation of communities of practice, management of best practices, change management, organizational learning, and use of appropriate knowledge sharing technologies for increasing value and efficiency of libraries in the changing context.

References