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Title: Librarians' perceptions of Knowledge Management in developing countries: a case with Indian academic libraries

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Corresponding Author: Dr. Mohammad Nazim, PhD

Corresponding Author's Institution: Banaras Hindu University

First Author: Mohammad Nazim, Ph.D. in Library & Information Science

Order of Authors: Mohammad Nazim, Ph.D. in Library & Information Science; Mohammad Nazim, PhD

**Abstract:** The purpose of this paper is to examine librarians' perceptions of knowledge management, including its concept, potential applications, benefits and major challenges of its applications in Indian academic libraries. A structured questionnaire, containing both open and close-ended questions, was sent by postal mail to 30 librarians of academic libraries in India of which 15 questionnaires were returned. Respondents were asked to define knowledge management and answer questions on its potential applications, benefits and major challenges of the knowledge management applications in academic libraries. Respondents were also allowed to specify their own views on the subject. The findings of the study show that there is a minor difference in how librarians define knowledge management. However, most of them focus on the use of technology or specific processes for the capture and use of explicit knowledge, rather than sharing and using more intangible knowledge embedded in the employees. They have positive attitude towards the applications of knowledge management into academic library practice, and not only because this can bring academic libraries closer to their parent organization, but also because it may help them to survive in an increasingly challenging environment. Although, librarians in the present study acknowledged that they are involved in the practices of knowledge management, but these were perceived as basic information management activities. Lack of understanding of knowledge management concepts, knowledge sharing culture, top management interest, incentives and rewards, financial resources and information technology infrastructure are perceived as the major barriers for incorporating knowledge management into academic library practice.

## Highlights

- The term ‘intangibles knowledge’ has been replaced by ‘tacit knowledge’ as suggested.

## KM initiatives in India

- The full names of the research laboratory acronyms "CSIR, ICMR and ICAR" have written.

## Discussion

- [Page 10] Para. 2, sentence 1 of RQ1: Para is revised as suggested.
- [Page 12] Para. 1: This section contains healthy discussion and compares the findings of present research with the findings of previous studies. Each point under the research question discussed separately. I think no more discussion is required.
- [Page 12] Para. 1, sentence 2 under RQ3: Revised as suggested.
- [Page 12] Para. 2, sentence 1 under RQ3: Revised as suggested.
- [Page 13] Para. 2, sentence 3 under RQ4: Revised as suggested.

## Conclusion

- Paragraph 1, sentence 1: revise: Revised as suggested.
- Paragraph 1: The last sentence seems to leave the paragraph incomplete: Revised as suggested. Paragraph 4, sentence 1: Revised as suggested.

## Typographical errors

All the typographical errors, which were pointed out, corrected accordingly.

### **Highlights**

- Librarians' perceptions of KM in India are shallow dealing with the management of only explicit knowledge or information management rather sharing and using tacit knowledge embedded in employees.
- Respondents of the study have positive attitude towards the applications of KM into academic library practice, and believe it can improve library operations and services and bring academic libraries closer to their parent organizations.
- Librarians in India are mostly involved in applying IT-based solutions, either for the management of various library operations and services or the development of intranets and institutional repositories, but no evidence has emerged for involvement in the creation and sharing of tacit knowledge.

**Librarians' perceptions of Knowledge Management in developing countries: a case with  
Indian academic libraries**

Mohammad Nazim  
Assistant Librarian  
Faculty of Law  
Banaras Hindu University  
Varanasi-221005 (INDIA)  
Phone No. +091-0542-6701865  
Email: nazim76@gmail.com

**(Correspondence and proofs will be received by Mohammad Nazim)**

&

Bhaskar Mukherjee  
Assistant Professor  
Department of Library & Information Science  
Banaras Hindu University  
Varanasi-221005 (INDIA)  
Phone No. +091-0542-6701024  
Email:mukherjee.bhaskar@gmail.com

## **Introduction**

Academic libraries have long enjoyed their status as the ‘heart of the university’. They are established to support teaching, learning, research activities and development of a culture of sharing and imparting knowledge to fulfill the mission and objectives of their parent institutions. Academic libraries in India are hybrid libraries and provide access to organized collections, assist the users in information search and circulate documents within the stipulated period of time. Most of the libraries have automated their operations for greater efficiency and provide additional facilities, such as Internet access, for offering web-based library and information services and the use of e-journals (Malhan, 2006). But these services are not enough to meet the information service requirements of emerging knowledge society. They have to initiate the next level of much desired services, i.e. just-in-time delivery of the most appropriate and high quality information at the place where it is desired.

The environment in which Indian academic libraries operate today and the way people search and access information has changed due to the rapid developments in Information and Communication Technologies (ICT). Development of the Internet, the World-Wide-Web, user- friendly databases and search engines have not only made a profound impact on the structure and functioning of academic libraries, but also have challenged the status of academic libraries as the only provider of information. This is because of the alternatives, such as Google Scholar, that are available for people to locate and access scholarly literature from commercial publishers. Technological changes, along with external pressure of market forces, push academic libraries to transform their structures and implement new managerial processes. These changes help them become more flexible and thereby stimulate innovation and performance to survive in the face of competition from emerging groups of information suppliers and an ever-increasing levels of user expectations (Sarrafzadeh, Martin & Hazeri, 2010). Knowledge Management (KM) is one of these processes. KM is recognized

worldwide as the most useful solution for the survival and success of academic libraries (Porumbeanu, 2010).

KM is defined as the process through which organizations generate value from their intellectual, knowledge-based assets (Santosus & Surmacz, 2001). The concept of KM emerged in the mid-1980s and was mainly applied in the corporate sector (Rus & Lindvall, 2002). With the appearance of new knowledge producers in the education sector, universities started to apply KM practice to support every part of their mission (Kidwell, Linde & Johnson, 2000). Libraries are not lagging behind in this race. Increasingly, library and information professionals are being referred to as knowledge managers and libraries and information centres, as knowledge centres (Jain, 2007). Academic libraries have vast amount of organizational knowledge about their users, processes, products and services as well as knowledge of their employees as key knowledge assets. However, librarians are reluctant to consider organizational knowledge as a resource similar to their library collections and facilities. Traditionally, librarian functions were mainly confined to the identification and acquisition of information for satisfying information needs of the academic community (Townley, 2001). Library and information professionals in India are still involved in the traditional practices of knowledge organization and information management (Nazim & Mukherjee, 2011). There is also a lack of understanding of various dimensions of KM and a lack of the necessary competencies among library and information professionals to develop and apply KM tools and techniques (Malhan, 2006). Keeping in view the ever-expanding operations of academic libraries and the new types of service demands, with limited financial resources, the present study is an attempt to examine the prospects and problems of KM practice in Indian academic libraries by examining the perceptions of librarians.

## **Review of literature**

### ***The concept of Knowledge and KM***

Knowledge is defined as justified personal belief that increases an individual's capability to take effective action (Nonaka, 1994). Knowledge is distinguished either as explicit or tacit. Explicit knowledge is defined as formal and systematic knowledge, which can be expressed in words or numbers and can be documented or stored in databases as electronic records (Aurum, Daneshgar & Ward, 2008; Nonaka, 1991). Tacit knowledge, on the other hand, is defined as the subjective and experience-based knowledge, which cannot be expressed in words or numbers and, therefore, cannot be easily transmitted and shared (Nonaka & Takeuchi (1995). In an organization, knowledge is embedded either in the processes and documentation as explicit or in the heads of the workers as tacit. KM is defined as a planned and structured approach to manage the creation, sharing, harvesting and leveraging of knowledge as an organizational asset, to enhance an organization's ability, speed and effectiveness in delivering products or services for the benefit of clients, in line with its business strategy (Du Plessis & Boon, 2004; Hayes, 2004; Skyrme and Amidon, 1997). The success of KM initiatives in every organization depends on creation, sharing and utilization of knowledge (Gandhi, 2004), because effective transfer and use of knowledge within an organization can reduce the chance of duplication, improve productivity and save a lot of cost, while lack of transfer and use can lead to the information overload and confusion as well as wasted manpower (Clarke, 2004).

In recent decades, a body of literature has emerged that explicitly addresses KM from the perspective of librarianship. However, there is an ongoing debate among the members of the Library and Information Science (LIS) community on whether KM is a completely new discipline or simply re-branding of librarianship or Information Management (IM).

Librarianship is often described as the organization of recorded knowledge (Corrall, 1998). In this sense, KM has a long root in library practice because librarians have been managing

codified or recorded knowledge for a long time. According to Lastres (2011), librarians have served as knowledge managers since the earliest days of libraries by maintaining the scrolls at the library of Alexandria and creating the catalogue for the House of Wisdom (a Ninth Century Islamic Library). Librarians have also developed and applied several KM principles in reference, cataloguing and other library services to encourage the use of knowledge (Ralph & Ellis, 2009). They have always performed roles as intermediaries between people who have knowledge and those who need to know (Sarrafzadeh et al., 2010). Thus, from this point of view, KM is not a new concept for librarians because they have been involved in the management of knowledge for a long time.

Another school of thought describes KM as a distinct field from both librarianship and IM because the focus of KM, according to Owen (1999), is on knowledge as a concept and on the tacit knowledge embedded in people as their experience, know-how, insights, expertise and competence. This embedded knowledge facilitates knowledge-rich relations and ensures ongoing development and innovation in the organization. The difference between KM and IM in the context of libraries was explained by Broadbent (1998), who describes KM in libraries as not about managing or organizing books or journals, searching the Internet for clients or arranging for the circulation materials, but rather she considers these activities as parts of the KM spectrum and processes. Supporting Broadbent's views, Davenport & Prusak (2004) argue that librarians must realize that people, not printed or electronic sources, are the most valuable knowledge asset of their organization. Due to the increased focus of KM on people and their expertise, some researchers (Martin, 2008; Sinotte, 2004; Wilson, 2002) highlight the importance of creating social knowledge networks such as online forums, discussion groups and communities of practice for sharing of knowledge. The importance of knowledge sharing and communication as part of KM is further emphasized by Wagner-Dobler (2004), who suggests the use of conversations, storytelling, mentoring and apprenticeship as



important methods of sharing knowledge between librarians and library users. But these techniques, according to Kebede (2010), are not much practiced by librarians and they are reluctant to implement these practices in their profession.

### ***Application of KM to academic libraries***

There is a group of scholars who strongly argue that librarians, on the basis of their skills with information handling, can apply and incorporate KM practice in several areas of an academic library including administrative and support services (Townley, 2001; Yi, 2006), technical services (Ralph & Ellis, 2009; White, 2004), reference and information services (Gandhi, 2004; Jantz, 2001; Markgren, Ascher, Crow & Lougee-Heimer, 2004; Ralph & Ellis, 2009; Stover, 2004), knowledge resource management (Lee, 2005), resource sharing and networking (Jain, 2007) and use of information technology for the development of knowledge repositories (Lee, 2005). The logic behind the application of KM practice in libraries is that it can help librarians utilize their expertise for discovering, through reference interview skills, the information needs of users and then add value to information through such services as evaluation, prioritization and summarization, which is more relevant for those seeking to create new knowledge (Scwarzwalder, 1999; Sinotte, 2004).

### ***Relevance of KM to academic libraries***

Although KM initiatives may vary from one organization to another, all types of organizations including business organizations, academic and research institutions, government bodies, and public service organizations have adopted the KM practices (Aurum, et al. 2008; Chua, 2009; Rowley, 2007). Some researchers from the library profession have also identified the potential benefits of KM for academic libraries and librarians. According to Townley (2001), KM offers many opportunities for academic libraries to manage knowledge for improving organizational effectiveness, for both themselves and their parent institutions. KM in academic libraries has also been recognized as: (1) a survival factor to overcome the

challenges librarians are facing in the changing and competitive environment (Porumbeanu, 2010; Sarrafzadeh et al., 2010); (2) a solution for improving future prospects (Roknuzzaman & Umemoto, 2009; Wen, 2005); (3) a method of improving knowledge-based services for internal and external users by creating an organizational culture of sharing knowledge and expertise within the library (Roknuzzaman, Kanai & Umemoto., 2009; Teng & Hawamdeh, 2002); (4) a solution for developing and applying the organizational knowledge to improve library operations and services and promote knowledge innovation by leveraging knowledge (Shanhong, 2000; Townley, 2001); and (5) a means for transforming an academic library into a more efficient and knowledge-sharing organization (Jantz, 2001).

### ***Use of KM practice in academic libraries***

Formal initiatives to apply KM practice seem relatively scarce in libraries. Librarians are experts in IM, yet frequently libraries lack the infrastructure to foster effective KM within their own walls (Levinge, 2005). Approaches to KM applications in libraries are general in nature and unlikely to show how KM really works in libraries. Gandhi (2004) describes the value of capturing tacit knowledge of reference librarians and explained the early efforts of reference librarians in capturing tacit knowledge through old information tools like card-files of frequently-asked questions. However, with the recent developments in ICT, these practices have been replaced by the use of Common Knowledge Databases (Jantz, 2001), web-based Ready-Reference Databases (Stover , 2004) and the Knowledge Base of Question Point (Markgren et al., 2004). Recently, intranets and advanced Web applications have provided an excellent platform to share knowledge within or outside libraries. Increasingly, libraries are using blogs, wikis, RSS, social media and other Web applications for knowledge sharing purposes (Bejune, 2007; Chu Kai-Wah, 2009; Kim & Abbas, 2010; Tripathi & Kumar, 2010). The findings of a study on the existing state of practices in tacit knowledge sharing in university libraries conducted by Parirohk, Daneshgar & Fattahi (2008), indicate that

intranets, telephone lines and traditional face-to-face communication methods have been used by most of the librarians, but knowledge sharing initiatives had not been institutionalized in a majority of the libraries that participated in the study. In a recent study, Kim & Abbas (2010) examined 230 randomly-selected academic library Web sites and found that RSS and blogs have been widely adopted by academic libraries

### ***The problems of adopting KM practice in academic libraries***

Despite of the similarities between KM and IM, not all librarians have the ambition necessary to gain access to more senior KM roles (Ferguson, 2004). The challenges for librarians lie in applying competencies used in managing information to the broader picture of managing knowledge (Bishop, 2001). According to Sarrafzadeh (2005), if LIS professionals remain reluctant to gain new skills, they will become irrelevant to their organization and will probably lose out to people from other fields in the competition for employment.

Traditionally, librarians' roles were limited to the identification, acquisition and organization of explicit or recorded knowledge. Although library and information professionals have been performing the role of information managers in handling organizations' documents and explicit knowledge, to establish a strong position in KM environment they need to extend their role by managing employees' tacit knowledge on the basis of acquiring professional competencies in the field of knowledge capturing, knowledge processing and knowledge application (Gulati & Raina, 2000). Management of the 'tacit' intuitions and 'know how' of people or knowledge workers in an organization is a great challenge for librarians (Bishop, 2001; Maponya, 2004). The most often mentioned challenges to the successful application of KM practice in libraries are inadequately trained staff and lack of expertise, reluctance of library professionals to accept the change, lack of understanding of KM concept and its benefits, lack of knowledge sharing culture, lack of incentives or rewards for innovation and sharing of knowledge, lack of guidelines on KM implementation, lack of top management

commitment, lack of collaboration and lack of resources (financial, human and technological) (Jain, 2007 & 2012; Maponya, 2004; Roknuzzaman et al., 2009; Sarrafzadeh et al., 2010; Sinote, 2004; Ugwu & Ezema, 2010).

### **KM initiatives in India**

India is moving quickly towards becoming a knowledge society. The Government of India is paying due attention to transforming India into a global knowledge super power. The Government of India has taken a landmark step by creating the National Knowledge Commission (NKC) in 2005 with the objective to transform India into a vibrant, knowledge-based society (Issac, 2008). The NKC seeks to develop appropriate institutional frameworks to strengthen the education system, promote domestic research and innovation and facilitate knowledge application in sectors like health, education, agriculture, water and energy, and industry. It also aims to leverage ICT to enhance governance and connectivity. Its prime focus is on five key areas of the knowledge paradigm: access to knowledge, knowledge concepts, knowledge-creation, knowledge application and development of better knowledge services (Malhan, 2006; National Knowledge Commission, 2007).

KM is not an unknown phenomenon to organizations in India. With the increase in in the use of information technology, many organizations have started KM initiatives in India. Results of a survey of Indian Fortune 100 companies on the use of KM practices show that more than 75 per cent of the companies had, or were considering, a KM programme (Knowledge Management Research Report, 2002). This early survey shows that Indian organizations are not too far behind in the use of KM applications. Wipro Technologies Limited developed a KM engagement and effectiveness (KMEE) index that gives top management a clear view, both at the organizational level as well as at each of the business unit levels (Chatzkel, 2004). Similarly, Tata Steel Limited developed the Knowledge Manthan Index to measure the effectiveness of its initiative by capturing aspects like

involvement of people, sharing of ideas, quality of implementation (Khanna, Mitra & Gupta, 2005).

Another Indian IT giant, Infosys Technologies Limited, has conceived, developed and deployed internally an elaborate architecture for KM that aims to take the company to a 'Learn Once, Use Anywhere' paradigm (Goswami, 2004) Infosys Technologies Limited has created an internal metric known as the Knowledge Maturity Model (KMM) for tracking its progression on KM initiatives. The KMM is a series of steps and aspirations that Infosys would like to accomplish. KMM includes various levels to determine the state of KM implementation (Mehta, Oswald & Mehta, 2007). According to Chawla & Joshi (2010), the starting point is where the organization does not have a KM system in place, followed by the firm's ability to be reactive, aware (data-driven decision- making), convinced (ability to sense and respond proactively to changes in technology and business environment) and ready to share (shape technology and business environment). This KM framework encompasses business strategy, people, processes and technology and follows a principle of incremental change, while not forcing employees to use the system (Suresh & Mahesh, 2008). Tata Consultancy Services Limited has also developed a Knowledge Management Maturity Model known as 5iKM3 to access and harness the organization's ability to manage knowledge. According to Mohanty & Chand (2005), the states of knowledge maturity can be achieved by systematically addressing the three pillars of KM, i.e. people (people mindset and culture); process (process, policy and strategy) and technology (technology and infrastructure).

A large number of organizations, particularly private sector organizations, in India have successfully adopted and implemented KM. In contrast, there is not much literature available on KM initiatives in Indian public sector organizations, particularly in academic institutions and libraries. Though there are some success stories of KM in the libraries of corporate sectors and research laboratories operating under the Council of Scientific & Industrial

Research (CSIR), Indian Council of Medical Research (ICMR) and Indian Council of Agricultural Research (ICAR), KM is still in its infancy in academic libraries. Little effort has been devoted to the study of how to improve library operations through KM. Some scholars in India (Aswath & Gupta, 2009; Malhan, 2006; Malhan and Gulati, 2003; Rah, Gul, & Wani, 2010; Raja, Ahmad & Sinha 2009; Singh, 2009; Subramanian, 2007; Thanuskodi, 2010; Tripathi, Patra & Pani, 2007; Vijayakumar & Vijayakumar, 2003) have discussed and identified the problems and prospects of KM in the context of the Indian academic library. The KM literature reveals the following major barriers to incorporating KM into Indian academic library practice:

- Lack of understanding of KM concepts
- Lack of knowledge sharing attitude due to insecurity and fear losing their importance by passing their tacit knowledge to colleagues
- Library professionals' reluctance to set their minds to cooperate or share resources
- Lack of technical skills in ICT
- Lack of appropriate tools and technologies
- Lack of sufficient funds
- Lack of collaboration and team spirit
- Lack of a centralized policy for KM
- Lack of top management interest in KM activities

### **Research problem**

The perceptions of KM, as they have emerged from the review of literature, are varied and there is no consensus on the definition of KM. This has resulted in, among other things, a lack of universal consensus on some of the key issues of KM, including the concept of KM and its applications to libraries. There are a host of working definitions of KM which create confusion not just for corporations, but also for libraries and non-profit information centers. Though several studies have been conducted on KM and its applications to academic libraries (See for example, Branin, 2003; Clarke, 2004; Daneshgar & Parirokh, 2007; Jantz, 2001; Mphidi & Snyman, 2004; Porumbeanu, 2010; Stover, 2004; Wen, 2005; White, 2004; Yi, 2006), most of these studies were conducted in developed countries. Therefore, it is

necessary to discover its relevance and importance from a developing country perspective such as India. It is also important to know what concepts of KM prevail among librarians in India and how this understanding might be developed to effectively respond to the KM challenge.

When something is not defined clearly, it is difficult to apply. Academic institutions, particularly universities, have significant opportunities to apply KM practice to support every part of their mission. According to Kidwell et al. (2000), there are five key areas of KM applications in universities, which include research, curriculum development, administrative services, alumni services and strategic planning. Although the concept of KM is relatively new to academic libraries in India, it is important to identify its applications in academic libraries. Although there are several benefits of KM applications for academic libraries, as noted in the review of literature (see for example, Porumbeanu, 2010; Sarrafzadeh et al., 2010; Townley, 2001; Roknuzzaman & Umemoto, 2009; Wen, 2005; Jantz, 2001), it is important to know how librarians in India perceive the benefits of KM.

Over the years, several IT-based tools and social practices have evolved. They are being used to support the processes of knowledge capturing, codification and sharing. Intranets, Web portals, blogs, wikis, social media, groupware, knowledge directories, communities of practice are increasingly used in libraries as knowledge-sharing tools, which has been reported in previous studies (Ajiferuke, 2003; Anderson, 2007; Farkas, 2007; Foo & Ng, 2008; Kim & Abbas, 2010; Mphidi & Snyman, 2004; Singh, 2007; Tripathi and Kumar, 2010). Use of these tools and practices helps academic libraries to improve performance and fulfill their mandate. However, there is uncertainty about whether to what extent they are being used in Indian academic libraries.

There are several challenges of KM applications to Indian academic libraries as identified from the review of literature. But it is also important to learn whether these challenges are common to all types of libraries or if librarians of different academic libraries in India perceive different challenges.

### **Research Questions**

The study focused on the following Research Questions (RQ):

- RQ1. What is the concept of KM, as understood by librarians?
- RQ2. In the view of university librarians, what are the potential applications and methods of incorporating KM practice in academic libraries?
- RQ3. What are the potential benefits of incorporating KM into academic library practice, as perceived by librarians?
- RQ4. What are the barriers of incorporating KM practice, as perceived by librarians?
- RQ5. How are academic librarians involved with KM at their institutions?

This study answers these questions using data collected from university librarians. The findings of the study will be useful to library practitioners and also help to identify important variables to be examined in future empirical studies. The present study is limited to central university libraries in India.

### **Methods of research**

This study employed a combination of quantitative and qualitative research methods using a structured questionnaire which included both open and close-ended questions. Academic institutions and their libraries in India are too numerous to consider as sample for any research. Therefore, only central university libraries were included in this study, keeping in mind that these are funded by the central government and might have advanced library infrastructure and facilities.



Of the total 42 central university libraries in India, 30 libraries were selected on the basis of collections, infrastructure and services at various locations within India. Purposive sampling methods were used to investigate the perceptions of librarians regarding KM and its applications in academic libraries. The university librarians of these universities were selected as respondents. However, in the absence of the university librarian, an officer up to the rank of assistant librarian could participate in the survey. A total of thirty (30) questionnaires were delivered by postal mail, of which only 15 were returned (50% response rate). The libraries that participated in the study were from nine different states of the country: four from Uttar Pradesh, four from Delhi, one each from Andhra Pradesh, West Bengal, Kerala, Chhattisgarh, Manipur, Mizoram and Meghalaya. These libraries are spread around a 4,000 KM area and serve an extended community of users. They are very different libraries in terms of staff and users. The data for the present study was collected during June-December, 2011. As it was not a large amount of data, data analysis was done by simple frequency count and is presented in tables.

The details of libraries participating in the study are shown in Table 1. Column A identifies the name of the University. Column B provides the year each university and its library was established. Column C provides an indication of the relative size of each library based on total collection. Column D indicates total number of sanctioned posts and number of staff currently working in the participating libraries.

### **Findings of the study**

The following section presents the major findings of the study.

#### **RQ1: Librarians' understanding of KM concepts**

In order to learn the respondents' understanding of the concept of KM, they were asked to choose any one of three definitions provided in the questionnaire. These definitions were

derived from KM literature and described the relationship of KM with learning organizations. Space was also provided to the respondents so that they might write their own definitions, if desired. It was believed that gaining an understanding of the concepts of KM among librarians would help to understand the prevailing concepts of KM among librarians. As shown in Table 2, more than half of the respondents chose option “B” which described KM as: *A process of creating, storing, sharing and re-using organizational knowledge (know-how) to enable an organization to achieve its goals and objectives.* However, there were 26.6% respondents who stated that KM deals with: *The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, organized for the benefit of the organization and its customers.* Option C, *KM is the activity, which is concerned with strategy and tactics to manage human centered assets,* was selected by 13.3 per cent of respondents. Some respondents also suggested their own definitions of KM, which are listed in Table 3.

## **RQ: 2 Applications and methods of KM practice in academic libraries**

A group of studies (see for example Townley, 2005; Yi, 2006; Ralph, 2008) reported that the use of KM in libraries may be extended to areas such as administration or support services, where libraries have had little impact in the past. In order to identify the potential areas of KM practice in Indian academic libraries, respondents were asked to indicate any combination of the five tentative areas listed. Respondents were allowed to check more than one option. They were also provided space for writing their own comments. Results are shown in Table 4.

Some respondents also expressed their own views regarding the potential areas of KM applications in academic libraries as summarized in Table 5.

In the next step, we tried to understand the ways KM is applied in academic libraries. As shown in Table 6, 86.6 per cent of the respondents agreed that *‘providing training and learning opportunities to the employees for acquiring new knowledge and developing competencies* is the most suitable method to implement KM practice in academic libraries. A great majority of respondents (73.3%) also agreed that the provision of rewards and incentives would encourage employees to share of knowledge with their colleagues. About per cent of the respondents believed that KM can be applied in academic libraries using ICT to support creation and access to internal knowledge. Another 40 per cent of respondents reported that KM can be applied in academic libraries by extending access to external information and knowledge resources through library networks, or partnership with other libraries, library portals, including links to library professional groups, and publications.

### **RQ3: Potential benefits of KM practice**

There is widespread recognition within literature that the use of KM practices would help academic libraries to improve overall performance and become more relevant to their parent organizations and in the communities they serve. To identify the perceptions of the librarians on potential benefits of KM practice in academic libraries, respondents were asked to indicate their views. The results are shown in Table 7.

### **RQ4: Barriers to KM applications in academic libraries**

As shown in Table 8, the respondents perceived a number of barriers to the application of KM practice in academic libraries. Some respondents have also expressed their own views regarding the problems for incorporating KM practice in academic libraries, which are summarized in Table 9.

### **RQ5: Librarians' involvement in KM practice**

Respondents were asked to specify the stage of KM initiatives in their libraries. As shown in Table 10, 40 per cent of the respondents indicated that they were currently evaluating the importance of KM for their libraries. Another 26.7 per cent indicated that they have a plan to introduce KM in near future. Twenty per cent were in nascent stage and initiated KM practice in some of the areas; only 13.3 per cent indicated that they have initiated KM in their libraries.

To identify the involvement of academic libraries in KM practice, respondents were asked to indicate if they were aware of any KM practice in their libraries. Fifty-three per cent of the respondents answered “No” (see Table 11). Those who answered “Yes” to this question were further asked to describe such practices of their libraries. Their involvement is supported by comments of the respondents which have been summarized in Table 12.

### **Discussion**

Using the data presented, this section discusses the major findings of the study based on five research questions.

#### **RQ1: What is the concept of KM, as understood by librarians?**

Examination of the responses regarding the definitions of KM shows that majority of librarians see KM as a management process, which enables the organization to create, store, share and re-use organizational knowledge, while only 13 per cent consider KM as an activity which is concerned with strategy and tactics of the management of people and their knowledge (Table 2). More than half of the respondents chose the same KM definition from the three definitions provided. This may be interpreted as meaning that there is a level of commonality among respondents on what KM means to them. The analysis of respondents'

own definitions of KM indicates that they have conceptualized KM from three major viewpoints: IM, tacit and cultural (Table 3). An analysis of those KM definitions that most respondents chose and those which they provided shows that their views on KM are varied. Most of them have shallow perceptions of KM dealing with the management of only explicit knowledge rather viewing KM as a holistic, organization-wide strategy integrating people, process and technology. They have mixed understandings of the concept of KM. Most of the respondents focused on the use of technology or specific processes for the capture and use of explicit knowledge rather than sharing and using tacit knowledge embedded in the employees.

The librarians who have participated in the present research seemed aware about the concepts of KM, as most of them tried to define KM in their own words (Table 3). However, there is some level of uncertainty about the relationship between KM and IM and differences between the two.

**RQ2: What are the potential applications and methods of incorporating KM practice in academic libraries?**

A majority of the respondents believe that KM may be integrated into reference and information services. Other possible areas of KM practice in academic libraries, as indicated by the respondents, were technical services, planning and decision making and library administration (Table 4). Additionally, they emphasized the role of KM in areas such as digital and online library services, e-learning, human resource management and project management (Table 5).

***Provision of training and learning opportunities for employees***

As shown in Table 6, 86.6 percent of the respondents agreed that ‘providing training and learning opportunities to the employees for acquiring new knowledge and developing competencies’ can help academic libraries to adopt KM practice in academic libraries. There is support for this viewpoint in the literature too. For example, Wen (2005) points out that

acquisition of knowledge by employees is one of the important steps in the KM implementation process. Further, he argues that knowledge can be acquired and enhanced by providing training or learning opportunities to the staff. Continuous learning through professional training courses or attending workshops and seminars are some the important methods of acquiring knowledge and developing competencies among employees for their involvement in KM practice as identified and discussed by Sanchez (2001).

### ***Promoting knowledge sharing culture***

There is strong view expressed within the literature that knowledge which is embedded in employees has no value until it is utilized and shared among other employees of an organization. Knowledge in an organization can be shared through the formation of communities of practice, formal or informal meetings, face-to-face interactions, mentoring, apprenticeship and use of best practices. According to White (2004), KM systems generally fail if there is not a knowledge-sharing culture in place. Sharing of knowledge depends on the strategy of an organization which might best encourage and motivate employees to share their most valuable personally-held knowledge (Hariharan, 2005). Gibbert & Krause (2002) argue that knowledge sharing cannot be forced, but can only be encouraged and facilitated. Further, they mention that knowledge sharing can be induced where there are perceived benefits for the employees in terms of incentives or rewards. Recognizing the importance of incentives and rewards for creating a knowledge sharing culture, a significant majority of respondents (73.3 per cent) indicated that KM can be incorporated into academic library practice by ‘encouraging staff for sharing of knowledge through the provision of rewards/incentives, trust, team work, etc.’.

### ***Use of ICT to support the creation of and access to internal knowledge***

It has been argued widely in the literature that ICT serves as a powerful enabler and provides effective and efficient tools for all facets of KM applications including capturing,

storing, sharing and access to knowledge (see for example, Gandhi, 2004). ICT also supports the process of knowledge sharing by facilitating people to locate as well as to communicate with each other (Roknuzzaman et al., 2009). Academic libraries have variety of knowledge sources available inside, as well as outside, the library. Availability and exploitation of both internal and external sources of knowledge is essential for the improvement of work efficiency of the staff as well as reducing the chance of redundancy. Academic libraries can use ICT for the automation of library functions and service, creation of knowledge repositories, development of database of best practices, library portals and Intranets, which help to locate, capture, store and share internal knowledge. About 53.3 per cent of the respondents indicated that the use of ICT to support access to internal knowledge is one of the important methods of KM applications.

#### ***Networking and partnership with other libraries***

Access to external information and knowledge resources through library networks or partnership with other libraries, including links to library professional groups and publications, etc. is also recognized as an important method of KM application in academic libraries by 40 per cent of respondents.

### **RQ3: What are the potential benefits of incorporating KM into academic library practice?**

#### ***KM helps to improve library operations and services***

One of the reasons for considering KM for academic libraries is to add value to library operations and services, as indicated by 93.3 per cent of respondents (see Table 7). Due to the advancements in ICT and the changing needs of users, there is an increased need for approaches that incorporate the use of tools and services that align with user's practices and expectations. KM enables librarians to capture, store, organize, share and disseminate the

right information to the right user at the right time. By using web applications such as Web 2.0 and social media, university librarians can empower their users by with the right content at the right time, in the right format. Use of social media can help librarians understand the requirements of their users, which ultimately leads to the delivery of more appropriate and timely services (Daneshgar & Bosanquet, 2010). Roknuzzaman, & Umemoto (2009) rightly point out that, if librarians are aware of the knowledge of their users and if they have better possibilities for sharing knowledge with them, then all this is beneficial for the services they provide for their users.

***KM helps to improve library's overall performance and future prospects***

KM helps to improve a library's overall performance and future prospects, as indicated by 46.6 per cent of respondents. There is a strong view expressed within LIS literature that libraries are in danger of being left behind in the competition with other information suppliers. KM is seen as a survival strategy for libraries, helping them to respond to challenges the librarians face in a discontinuously changing environment (Porumbeanu, 2010; Sarrafzadeh et al., 2010). Other major challenges for academic librarians, as observed, are: the downward trends in library support, erosion of acquisitions and operating budgets, an increasing in user services demands, outdated management and organizational structure and the new technological developments (Wen, 2005). To deals with these issues, librarians are required to adopt new managerial processes that could address these challenges and help academic libraries to survive by increasing efficiency, improving the quality of information products and user services (Shanhong, 2000; Teng and Hawamdeh, 2002). By capturing and utilizing knowledge, libraries can achieve a multitude of benefits, reduced research and development costs, reduced duplication of work, transfer of best practices, increased employee capabilities and enhanced employee satisfaction. This will ultimately improve the library's overall performance and future prospects.



### ***KM helps to make academic libraries more relevant to their parent organizations***

About 47 per cent of the respondents also think that KM helps academic libraries to become more relevant to their parent organization. It is believed that implementation of KM practice in academic libraries can enhance their overall visibility within the organization. Librarians can benefit their institutions, their libraries, and themselves by undertaking a campus-wide role in managing organizational knowledge through the creation of knowledge repositories and management of content (Townley, 2001). Implementation of KM practices can also assist librarians in meeting user needs in the light of ultimate organizational goals (Sarrafzadeh et al., 2010). Thus, KM provides academic libraries an opportunity to collaborate with other units in their organizations and hence, to become more integrated into institutional operations and enhance their overall visibility within the organization.

### ***KM helps to transform academic libraries into learning organizations***

According to 53 per cent of respondents, implementation of KM practice can help academic libraries by transforming them into learning organizations. KM facilitates the continuous and ongoing processes of learning and unlearning, thus ensuring that the need for imposing top-down radical change is minimized (Malhotra, 2000). According to Parirokh, et al. (2008), organizational learning in academic libraries can be improved through sharing of their knowledge among employees. Organizational learning is essential for developing professional competencies and it must be fostered and enhanced continuously. Professional competencies based on activities such as knowledge organization and preservation, information search, retrieval and dissemination, the creation of information products and services constitute essential organizational assets of academic libraries. Therefore, librarians should identify and focus on those few processes which they do best, developing and improving them all the time. Through a variety of mechanisms of organizational learning,

librarians can create, collect and use the knowledge necessary for these processes. Based on this knowledge, they can develop new operating procedures and improve the existing ones.

**RQ4: What are the barriers of incorporating KM practice?**

As shown in Table 8 and 9, the respondents perceived a number of barriers to incorporating KM into academic library practice. One of the major barriers of incorporating KM into academic library practice, as perceived by the 93 per cent of respondents (Table 8), is the lack of expertise among library professionals to identify knowledge resources within or outside the library. KM, as described by Amar (2002), is the effective use and reuse of both explicit and tacit knowledge of an organization. According to Nelson (2008), identification of knowledge resources is one of the important steps in the KM implementation process. The success of KM in libraries, according to Abell & Oxbro (2001), depends on the abilities of the employees to “identify, acquire and evaluate internal and external sources of knowledge and integrate, organize and make relevant knowledge available to the right person at the right time.” The present study indicates that librarians are mostly involved in the management of information or explicit knowledge. They equate the concept of KM with information management and do not recognize the importance of identifying, capturing and sharing of tacit knowledge due to the lack of expertise.

LIS professionals have been acknowledging for years that KM is a burgeoning field of great interest to them, but they do not know what is exactly meant by KM and they are not aware of the benefits of KM in libraries. Misunderstanding of the concept of KM is also perceived as a barrier of incorporating KM into academic library practice by 87 per cent of respondents in this study. This finding confirms the results of a study by Roknuzzaman & Umemoto (2009) who, while investigating the view of library practitioners regarding KM, found that KM is misinterpreted as information management or content management. Due to

this lack of understanding of KM, library authorities or decision-makers often do not show any interest in KM.

Lack of a knowledge-capturing and knowledge-sharing culture was perceived as another major barrier of to implementing KM applications in academic libraries by 80 per cent of respondents. Sharing of knowledge is one of the most critical factors for the effectiveness of KM, as cited in the literature. Previous studies by Blair (2002) and Roknuzzaman & Umemoto (2009), have also reported that the existing library environment and mechanisms do not support or appreciate staff that share their expertise, and there a need of a favorable organizational culture for the creation and sharing of knowledge in libraries.

Lack top management support and provision of rewards and incentives were perceived as barriers to implementation of KM applications in academic libraries by 67 per cent and 60 per cent of respondents, respectively. The impact of top management and leadership support is greater for KM as it is an emerging discipline, particularly in India, and employees may need the added incentives of a total commitment from their organizations' top management and leadership. Top management support also influences other factors critical to the success of KM, such as organizational culture, as the role of leadership is crucial in fostering trust and promoting a knowledge-sharing culture. According Bennett and Gabriel (1999), a structured reward system with well-defined policies helps in the flow of information. Provision of fair performance measurement can also motivate employees to share their knowledge and to help others.

In this survey, 53.3 per cent of respondents believe that LIS professionals' reluctance to accept change in their normal working life is also a hurdle to initiating KM practice in academic libraries. Financial constraints, including lack of IT infrastructure, are also major barriers that discouraging LIS professionals to initiate KM in academic libraries, as indicated by 60 per cent and 47 per cent of respondents, respectively.

### **RQ5: How are academic librarians involved with KM at their institutions?**

The results of the present research indicate that librarians in India are still in the early stage of understanding the potential implications of KM. They have mostly been involved either evaluating the importance of KM or planning to introduce KM practice in their libraries (see Table 10). Even fewer libraries have initiated KM practices. On the basis of KM maturity model proposed by Yang and Bai (2009), academic libraries in India may be placed at the first and second level of KM implementation stage.

About 40 per cent of respondents in this study acknowledged that they are aware of at least one of the practices of KM in their libraries (Table 11), but these may be perceived as basic information management activities, as suggested from the respondents' own views presented in Table 12. They have mostly been involved in KM through the use of their skills in organizing and retrieving information or the development of intranets, institutional repositories, management of content and the training of users in the effective use of databases and other resources. However, no evidence is seen for the involvement of academic libraries in the creation and sharing of tacit knowledge, either through the development knowledge directories or the formation or encouragement of communities of practice. Thus, there seems to be little impact of KM on academic library operations and services in India. These results are consistent with the findings of an earlier study conducted by Jain (2007) who in investigating the practices of KM in academic libraries of East and South Africa found that their practices went little beyond traditional information management activities and that a majority of the participants considered themselves information managers. A recent study on KM and its potential application in libraries by Sarrafzadeh, et al. (2010) also reported similar findings.

## **Conclusion**

Although the concept of KM emerged from the business sector, its practices are now being applied in the domain of non-profit and public sector organizations including academic institutions. Increasingly, library practitioners are acknowledging the importance of KM for libraries. The commonly-held view is that a library is a knowledge-based organization where the organization and maintenance of recorded knowledge is a practice as old as civilization itself. Therefore, the concept of KM is not considered new. Arguably, libraries have always been involved with collecting, organizing and disseminating recorded or explicit knowledge, which is defined as knowledge that can be captured and, therefore, easily communicated and shared with the help of IT systems. However, the focus of KM is largely on the creation and sharing of tacit knowledge, which is defined as unrecorded knowledge embedded in people (their skill and expertise). Thus, KM is usually misinterpreted as the information management or content management activities of a library.

From the study's limited sampling, it appears that the levels of understanding of KM concepts among librarians are varied and most of them view KM as the management of information resources, services and systems using various technologies and tools through activities such as information acquisition, storage and retrieval, data mining, and information use, through the training of users in the effective use of databases and services. This could be due to the logical overlap between the concepts and tools involved in the management of information and knowledge.

However, most librarians agree that KM is applicable to academic library practice and its application is the best way to improve the functions and services of academic libraries. Although there is a lack of KM framework for academic libraries, provision of training and education, favorable organizational culture, use of ICT and networking or partnerships with other libraries are validated as the important KM enablers by the respondents of the study.

These findings may be used as a framework for incorporating KM practices, as well as evaluating existing KM practices, in academic libraries in India.

In spite of librarians' limited involvement in KM practice, there seems to be a developing interest among librarians towards KM. This conclusion may be drawn on the basis of three major sets of perceptions emerged from the review of literature. First, librarians can and should enter into KM roles through the application of their traditional skills related to IM. Second, that there are potential benefits for them from the involvement in KM including personal career development and enhancement of the position and status within their parent organizations. Finally, that KM offers potential benefits for the development of libraries.

The findings of the present study have a number of practical implications for both academicians and library practitioners. In order to implement KM effectively in academic libraries in India, librarians need to clarify the concept of KM. Many people still associate KM with IM and, as such, are reluctant to take ownership of the concept. The implementation of KM in academic libraries will not succeed if librarians view KM just as an application of some technology or specific processes along with traditional practice of IM. Librarians, therefore, need to broaden their understanding, change their traditional mindset and apply a holistic approach of KM focusing on the management of both explicit and tacit knowledge.

Since the focus of KM is on people's expertise, librarians must acquire competencies in the field of communications, human resource management, change management, project management, team work, mentoring, presentation and leadership. These competencies are necessary for the proper repositioning of academic librarians to face the challenges of the present day realities. A focus on the transfer of traditional LIS skills, for example, to the management of tacit knowledge could greatly enhance the influence of librarians in the field of KM and contribute to their overall understanding of the need for knowledge both at organizational and personal levels.

Academic libraries work as a unit of the university system to support the objectives and mission of their parent organizations. Since an academic library is a unit in an organization (university or institute), implementing KM at its own level is a difficult task without the support of the parent organization. Universities and institutes can support academic libraries by providing adequate financial support to develop KM systems, formulating a strategy for KM implementation and making provision for reward or promotion on the basis of actual performance of the employees.

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**Table 1: List of participating libraries participating libraries (N=15)**

A Name of the University libraries	B Year of establishment		C Total Collection	D Library Staff	
	University	Library		NPS*	NSW* *
Allahabad University (ALU), Allahabad	1837	1913	653164	88	44
Babasaheb Bhimrao Ambedkar University (BBAU), Lucknow	1996	1996	13000	9	7
Banaras Hindu University (BHU), Varanasi	1916	1917	1061378	159	122
Guru Ghasidas University (GGS),	1983	1984	110000	22	19
Indira Gandhi National Open University (IGNOU) New Delhi	1985	1986	130000	17	17
Jamia Millia Islamia University (JMIU), New Delhi	1920	1920	340000	59	50
Jawaharlal Nehru University (JNU), New Delhi	1968	1969	560000	99	78
Manipur University (MPU), Imphal	1980	1980	160000	25	18
Maulana Azad National Urdu University MANUU) Hyderabad	1998	1998	32498	22	22
Mizoram University (MU), Mizoram	2001	2001	87431	26	20
North Eastern Hill University (NEHU), Shillong	1973	1973	250000	73	63
Pondicherry University (PU), Pondicherry	1985	1986	251000	53	36
University of Delhi (UOD), Delhi	1922	1922	1475729	416	126
Visva Bharati (VB), Shanti Niketan, West Bengal	1921	1925	376511	42	28
<b>Total</b>				<b>1122</b>	<b>700</b>

\*=Number of Post Sanctioned. \*\*= Number of Staff Working

**Table 2: Definitions of KM**

	Which definition of KM do you find most suitable?	%
A	The creation and subsequent management of an environment which encourages knowledge to be created, shared, learnt, enhanced, organized for the benefit of the organization and its customers.	33.6
B	KM is a process of creating, storing, sharing and re-using organizational knowledge (know-how) to enable an organization to achieve its goals and objectives.	60.0
C	KM is the activity, which is concerned with strategy and tactics to manage human centered assets.	13.3

**Table 3: Definitions of KM as defined by the respondents**

Creation of digital repository to preserve organizational knowledge for easy retrieval, use and retention for activities such as problem solving, strategic planning and decision making.
Management and organization of information sources with the use of information and communication technologies.
Management and organization of all types of knowledge resources such as books, journals, theses, manuscripts, etc. KM is not new thing for information professionals, since they have been managing knowledge for a long time, but today the focus is on the content management, digitization, etc. So application of ICT in the storage and access to information is called KM.
The term KM is confusing and very close to information management and knowledge organization which are the primary activities of libraries. I think the term IM is more appropriate for libraries, however, business community coined this term and library professionals are blindly using it.
Knowledge is difficult to manage; only information can be managed. Knowledge which individuals hold can only be shared and transferred to others through communication, discussions, meetings, etc. In organizations people usually do not share knowledge due to several political and cultural reasons. For the effectiveness of knowledge sharing and transfer, organizations must create conducive environment to their workers.

**Table 4: Potential areas of KM applications**

<b>In what aspects is KM applied to academic libraries?</b>	<b>%*</b>
Reference and information services	53.3
Policy and decision making	46.6
Technical services	33.3
Administrative services	33.3
Planning of information services	26.6

*\*Overall per cent is greater than 100% because multiple answers were allowed.*

**Table 5: KM applications in academic libraries: relevant comments**

Digital and online library services, particularly web-based information and reference services such email alert, CAS, SDI, answer to Frequently Asked Questions.
E-learning.
Human resource management.
Project management.
Cataloguing by downloading catalogues from other libraries to avoid duplication of work.
Initiating new information services such creating subject-based portals, Institutional Repositories, interactive online reference services, etc.
Value added services such as evaluation, summarization of information for specialized users.
Information literacy programmes.

**Table 6: Methods of KM applications in academic libraries**

<b>How is KM applied to academic libraries?</b>	<b>%*</b>
Providing training and learning opportunities to the employees for acquiring new knowledge and developing competencies (i.e. through training programmes, participation in communities of practice, formal/informal meetings, e-learning, workshops, seminars, etc.).	86.6
Encouraging staff for sharing of knowledge through the provision of rewards/incentives, trust, team work, etc.).	73.3
Using ICT to support the creation and access to internal knowledge (i.e. automation of library operations and services, creating knowledge repositories, creation of databases of best practices and knowledge directories	53.3
Extending access to external information/knowledge resources through library networks, or partnership with other libraries, library portals including links to library professional groups and publications, etc.).	40.0

*\*Overall per cent is greater than 100% because multiple answers were allowed.*

**Table 7: Potential benefits of KM practice in academic libraries**

<b>What benefits does KM provide for academic libraries?</b>	<b>%*</b>
KM can add values to the library operations and services	93.3
KM can reduce the chances of duplication of work	73.3
KM can make academic libraries more relevant to their universities/institutes.	73.3
KM can help to transform academic library into a learning organization.	53.3
KM can improve library's overall performance and future prospects.	46.6

*\*Overall per cent is greater than 100% because multiple answers were allowed.*

**Table 8: Librarians' perceived challenges for incorporating KM practice in academic libraries**

<b>Barriers</b>	<b>%*</b>
Lack of expertise to identify knowledge resources within or outside the library	93.3
Lack of understanding of KM concept and its benefits	86.6
Lack of knowledge capturing and knowledge sharing culture	80.0
Lack of top management commitment to initiate KM	66.6
Lack of rewards/incentives for innovative performance and knowledge sharing	60.0
Lack of financial resources to initiate KM.	60.0
Reluctance of the library professionals to adopt the change	53.3
Lack of IT infrastructure to support capturing, storing, sharing and distributing information	46.6

*\*Overall per cent is greater than 100% because multiple answers were allowed.*



**Table 9: Barriers to the applications of KM practice: relevant comments**

KM is a new concept for librarians that need some specialized training and motivation for the staff.
Knowledge sharing is not part of performance evaluation and there are no incentives or recognition for knowledge sharing, therefore, staffs neither willing to share knowledge nor take any extra responsibility.
KM is usually misinterpreted as information management or content management. For this lack of understanding of KM, librarians or decision-makers often do not show any interest in KM.
Unwillingness to adopt and initiate change.

**Table 10: Status of KM initiatives in academic libraries**

<b>Stages of KM initiatives</b>	<b>%</b>
Evaluating the importance of KM for their libraries	40.0
Introduction stage (planning to initiate)	26.7
Nascent stage (initiated in some of the areas)	20.0
Growth stage (almost initiated)	13.3

**Table 11: Use of KM practice in academic libraries**

<b>Do you aware of any KM practice in your library?</b>	<b>%</b>
Yes	40.0
No	60.0

**Table 12: Use of KM practice in academic libraries: relevant comments**

Our library provides training to the subordinate staff
At many stage from acquisition to management of library but fully in systematized way by automation and digitization
In the technical section by maintaining authority file to reduce duplication of efforts for time saving.
Library automation, creating our library website for availability of resources on www.
We archive the knowledge created in our institution in our digital repository.
Creating a database of newspaper articles.
Building articles database of periodicals subscribed in our library.