DIGITAL LIBRARY
AN
INITIATIVE TOWARDS
DIGITAL INDIA

Editor
Ashwani Sharma
Librarian
D.A.V. College, Pehowa

Recent Trends in Library Services

CONTENTS

LIBRARIES FOR FUTURE: ROLE OF EMERGING INNOVATIVE TECHNOLOGIES IN TRANSFORMATION OF ACADEMIC LIBRARIES

Dr. Rupesh Gaur

Mrs. Rajinder Kaur

Abstract

In digital era, libraries are gradually extending beyond the four walls of individual institutions to online open access information spaces through the facility of internet and WWW. They are transforming from a traditional world to digital world. Libraries have become a hub of technology with the emerging technological innovations. They have undergone a considerable improvement and have improved their position and process by focusing on the 'user center approach' which aims at providing quality services to its target users as fast as possible. With the growing technological advancement, our advance libraries are fully equipped with hi-tech gadgets which offer a variety of services as wireless internet services, invisible web, scholarly search engine, E-learning, content management, virtual reference service and mobile app etc to engage patrons. To ensure the success of emerging technological innovation process for attaining the new and constructive objectives of libraries, there is a need of good leadership and organizational change. All these recent developments and emerging innovative technologies have made a profound impact on libraries and have opened new dimensions for storage, retrieval and dissemination of information. The success of a modern library depends on the utilization of new innovative technologies. The present paper is a conceptual and theoretical framework that will throw light on the use and impact of

technologies in libraries. The chief consideration of the discourse is to underscore the skills and competencies of librarian to meet the challenges of emerging technological innovations.

Keywords: Academic libraries, emerging & innovative technologies, issues and impact.

Introduction

An older conception of libraries was just to regard them as a store house of books where books were kept for preservation and their services depended on print media which was restricted to available collection of a single library. Today, libraries are no longer confined to the building of four walls, but are rapidly shifting to a hub of technology. They offer a variety of services via emerging technological innovations to improve its position and process like wireless internet services, invisible web, scholarly search engine, e-learning, content management, virtual reference service and mobile app etc. The sheer volume of information available in e-books, databases, archives and other digital materials has spurred technological innovation in the organization, management and distribution of library resources. Now libraries have become nerve centre of institution which not only serves the source of knowledge but also supports teaching, research and other academic programs to satisfy the advance and varying information needs of its users. This development of emerging technology has played an important role in improvements of library work as well as services. It has proved as one of the best innovations and has also marked a new era of the profession of librarianship. In the digital era these emerging technologies have made a profound impact on libraries and has opened new dimension for storage, retrieval and dissemination of information.

On other side, the library professionals should possess a high skill and competence to update their knowledge on technological advancement so

that they can keep pace with the vast emerging technologies as well as utilize them for providing services to satisfy the multidimensional information needs of their users effectively and efficiently. They must equip themselves with core competencies and technological skills required to manage the changes in digital environment. The librarian should also realize his responsibility of resolving the problems faced by the staff member while adapting themselves to the new technical expertise and ensure that they are user-friendly.

Need of Technological Innovation in Libraries

In digital era libraries are constantly changing due to various emerging technologies. The traditional concepts of libraries have undergone metamorphic change in relation to storage, retrieval and dissemination of information to provide better services to its target users. Libraries are adopting emerging innovative technologies mainly due to the following reasons:

- To avoid repetition of efforts.
- To save the time of users as well as staff.
- To Assess user's expectations
- To Create Virtual learning environment
- To increase efficiency of services.
- To make fast and easy access to information.
- To provide quality library services.
- For collaboration and creation of library networks.
- To enhance the knowledge and experience.
- To improve communication facilities.
- To make possible remote access to information.
- For development of digital & virtual libraries
- For the growth and usage of web resources
- To cater to information explosion
- To facilitate online bookshops and information services.

Review of Relevant Literature

Shivkumar (2017) described the changing and dynamic role of academic library professional in digital environment. The present study gives introductory background of digital age as well as role of emerging trends in information services and role of librarian. The study also presents the vision of new generation as well as challenges of these trends and also reviews the problems faced by librarian in handling the technology in digital era.

Dsilva, Waydande and Hawaldar (2016) highlighted the libraries that are redefining their role in innovative technological era with practical experience to assess its impact on position and procedures. According to authors, the new role of libraries such as modernization of technology, embracing service oriented structure and delivery of access to library collection in more unified and comprehensive manner is helpful in providing right information to right user at the right time.

Weber (2016) highlighted the transformation changes in technical services in libraries and these changes are varied depending upon its configuration in a library. She noted that technical services are becoming more electronic based due to arrival of internet and web based electronic resources. All these new developments have created challenges for library professionals to play new role and improve their skill to manage resources. The author traces these changes and examines that librarians have to redefine their roles and skills to handle print as well as digital resources together for patron access by adapting new cataloguing standards in digital era.

Gurjeet Kaur (2015) emphasized that technology rapidly transformed the libraries in digital era. Technology has brought the changes in library services and resources. According to author information in digital age is becoming more complex, competitive and dependent on technological change so there is need to more skilled professional to handle this emerging technology. The present study also reflect that how e-learning

and teaching has influenced every facet of library resources and services.

Muthu, Rameshbabu and Baskaran (2015) emphasized on need and expectation of users. The present article emphasizes that library professionals should adopt innovative ideas and creative ways to meet diverse information needs of their users. It is particularly important as the work environment is becoming increasingly complex and competitive. It is therefore, crucial for libraries to have quick access to high quality, accurate up-to-date and reliable information to make timely and well informed information to the target users. The authors specially emphasized on adopting non-traditional and innovative methods to meet highly specialized information needs of target users.

Laitinen and Saarti (2014) in their article emphasized on evidence based change in library management. The present paper is a survey study on Finnish university library to evaluate its impact on research and society, for this purpose library statistics and user satisfaction survey are used. The present paper highlights that to manage change and to conduct evidence based benchmarking, the library communities need national and global access tools, strategic planning, economically efficient decisions and especially modern method of statistical data analysis. The present paper mainly emphasized that reliable library statistical can be good source of change. The present paper also examines the library statistics by which library services can be redesigned to improve quality of action and services.

Impact of Technological Innovation on Libraries

The emerging technologies have made a long lasting impact on library. In digital era libraries are shifting from storehouse of books to hub of innovative technologies and thriving in a technology fueled world. Libraries are no longer house of books and card files, but become the centers of creativity, research and collaboration. The sheer volume of information

spurred technological innovation in the organization, management and distribution of library resources. All these recent developments in emerging technologies have made a profound impact on libraries and has opened new dimension for storage, retrieval and dissemination of information. Technology has changed the expectations of library patrons also. Users today expect to access information from wherever they are at their residing places. That is why library systems are setting computers for use inside the library as well as online networks to access to e-books, research databases and archives. So, a number of emerging technologies are being used in libraries to fulfill the complex information needs of its target users so that right information to the right user at the right time can be provided effectively and efficiently. These are: Web 2.0, Library 2.0, Social networks, Blogs, Mashups, Tagging & Bookmarking services, Virtual reference service, Multimedia, Mobile technologies, Semantic web and cloud computing etc.

The library 2.0 is application of interactive, collaborative and more web based technology driven for the society. Social Networking service uses software to build online social networks for communities of people who share interest and activities or who are interested in exploring the interests and activities of others. Most services are primarily web-based and provide a collection of various ways for users to interact, such as chat, messaging, e-mail, video, voice chat, file sharing, blogging, discussion groups and so on. The semantic web and mobile technologies are offering libraries a new world of opportunities to engage patrons. The social networking websites and apps combined with the availability of affordable cloud-based services and the evolution and adoption of emerging technologies are enabling librarians to build and share communities, store and analyze large collections of data & access digital collections and services in ways never thought about before. New digital collections are stored in the cloud and

mobile applications which are developed around them. Libraries are claiming their venues on location-based social networks and developing bleeding-edge. Before implementing emerging innovative technologies in academic libraries, the following points should keep in mind as:

- Customer focus.
- Completeness.
- Distribution flexibility.
- Easy and fast access.
- Precision and relevance of information.
- Reliability.
- Users expectations.
- Appropriate service products.
- Physical evidence.
- Invite feedback.
- Tangibles the service offered.

Role of LIS Professionals

In a fast-changing, expanding diverse global digital information environment, libraries are facing a variety of complex challenges from multiple sectors of knowledge society in emerging technological era. The role of the LIS professionals is totally changed in this environment from librarian to e-librarians. To satisfy the information needs of users at maximum extent is the main goal of the library. In the technological era, to survive, timely updating of skills and techniques are necessary for LIS professional. The main role of librarian in the digital era is to provide fast and effective access to appropriate and accurate information to serve it target users. The changing role of the library professional implies a set of updated skills needed for facing the challenges created by latest web technologies in the digital environment. Areas where the changing role of the librarian can be specifically identified are:

- Creation of digital collection.
- Selection of the e-resources.
- New role from librarian to e-librarian.
- Availability of full-text materials on the Internet.
- Concept of 24 * 7 days library and information services
- Web based products and services.
- Emergence of library networking.
- Marketing of library and information products and service.
- Dealing with the user enquiries in the new digital era.
- Working with the technical staff.
- Effective monitoring and feedback system.
- Training required on more information skills.
- Implementation of e-learning environments.

Challenges of Emerging Technologies

The adoption of emerging technologies has made great advantage over the library services. These have made a long lasting impact on libraries. With the help of such technologies one can easily retrieve their required information within a short period of time. But there is a lack of challenges in adopting the emerging technologies in academic libraries. Some of the challenges are:

- Lack of proper planning among staff and management regarding adoption of emerging technologies has become the big hindrance for professionals.
- In mostly academic libraries, due to lack of proper management support the professional are unable to adopt the emerging technologies.
- Due to lack of management and technical skills, the academic library professionals are not able to handle technologies. This is a big hindrance in implementation emerging technologies.

- ICT demand more funds for its infrastructure and continuing services. Most of the libraries have inadequate fund for purchasing the emerging technologies.

- Lack of proper training programs among LIS professional is another challenge in adaptation of emerging technology in libraries. The training programs should be organized so that LIS professional can be trained enough to handle the vast amount of technologies.

- In technological service system, infrastructure such as software, hardware, internet facilities and other physical equipments are required to provide easier, faster and comprehensive access to information. Absence of stable technical network infrastructures, it is a big hindrance for implementation innovative technologies.

- Lack of willingness among staff is another reason in adoption of technological innovation in libraries. The professional should have natural willingness to welcome new technology.

- Large scale of piracy of software and plagiarism is an important issue that the academic library professionals are facing at the present day in providing digital information service. The cost and timeliness in retrieving the information are also considered. The library is responsible for maintaining the awareness of all users about copyright issues.

- Technology has broken down the rigid hierarchical structure of the organizations which is another important issue in changing the roles of the librarian in the knowledge society. ·

- The biggest challenge that the librarians are facing in the knowledge society, seems to be the lack of clarity in vision and a general lack of the direction. The academic library professional should become capacity builders and facilitators to the knowledge society.

- The big hindrance in adoption of emerging innovative technologies in academic libraries is lack of motivation among technical professionals. The library professional should be motivated regarded new technologies from time to time through training programs or through seminars.

Benefits of Technological Innovation

The use of technological innovation in library services and resources is clearly visible through emergence of new technologies and drastic reduction of the cost of hardware and soft ware. Due to enormous capacity of data storage, quick processing, access, retrieval and dissemination of information, traditional libraries are quickly transforming into digital libraries. Today's the libraries are evolving into information networks than standalone libraries by forming networks and sharing resources and slowly converting from real to virtual communities by using emerging innovative libraries. The benefits of emerging technologies can be visible as:

- Time Saving.
- User friendly.
- Large storage capacity.
- More interactive and collaborative.
- Websites management.
- Offer wide range of services and resources through varieties of technologies.
- Creation of Web portal
- Virtual reference services.
- Open access resources.
- Electronic Resource Management.
- Personalised services through mobile technologies.
- Information Literacy & Instruction

- Fast, easy & limitless access to web resources.
- Building institutional repositories.
- Open networks.
- Quick processing, retrieving and disseminating of information.
- Help in promotion and marketing of information.
- Research assistance.
- Creation of online database.
- Web based sharing of information as well as technology.
- Technology Training for both Staff and Patrons.

Conclusion

Traditional libraries are just storehouse of books which cannot fulfill the multidimensional needs of its target users in innovative technological era. The main reason behind in adoption of innovative technologies is vast amount of information available in e-books, databases, archives and other digital materials. The developments in emerging innovative technologies in digital era have made a profound impact on libraries and has opened new dimension for storage, retrieval and dissemination of information. On other side LIS professionals are facing challenges for new and emerging skills and trying to get the ability to remain flexible in a working environment that is constantly changing. The rapidly changing environment of academic libraries needs attention of the authorities that manage LIS education in the country. So the existing libraries have to re-engineer themselves to survive in digital environment to suit the needs of modern society.

References

1. Arora, Jagdish. Library 2.0: innovative technologies for building libraries of tomorrow. ETTLIS proceedings of bridging the digital divide in JIIT University, Noida, 2009, 49-65.

2. Jeevan, V.K.J. Digital library development: identifying sources of content developing countries with special reference to India. The international information and library review, Elsevier, 2004, 185-197.

3. Jerry, Arokyamary R and Ramasesh C P. Emerging trends and technological: Impact of information communication technologies on libraries and LIS professional. My science, 2011, VII (1-2), 34-41.

4. Kaur, Gurjeet. The future and changing role of academic libraries in digital age. Indian journal of information sources and services, 2015, 5(1), p.29-33.

5. Kumar, Manish. Academic libraries in electronic environment: Paradigm shift. Vision and the changing roles of the future academic library. ICAL, Delhi, 2009.

6. Kumar, Shiv. Impact of digital era on academic library: It's play with library professionals.International journal of Library and information science, 2017,6(4), 1-7.

7. Muthu, M, Rameshbabu, P and Baskaran, C. Rethinking of innovative LIS service for libraries in digital era. Knowledge Librarian- An international peer reviewed Bilingual e-journal of library and information science, 2015, 2(1).

8. Parvez, Ahmad. Development in library services with the advent of ICT based products and services: A continuous process. International journal of digital library services, 2011, 1(2), 1-9.

9. Patrick Lo. How do academic libraries manage change in the 21ˢᵗ century. Journal of East Asian libraries, 2008 145(15).

10. Saxena, Archana and Dubey, T N. Impact of digital technology on academic libraries of India: Problems and prospects, 2014, 3(3).

11. Tenopir, C. Research data services in academic: Data intensive roles for the future?. Journal of e-science librarianship, 2015, 4(2).

12. Vaughan, Jason. Technology innovation: Perception and definition. Library technology report, 2013.

13. Verma, Manoj Kumar. Changing role of library professional in digital environment: a study. International journals of library science, 205, 13(2).