

Future Of Libraries In India

Abstract

This paper is based on the impact of artificial intelligence and advanced computer technology on the nature of future libraries will be enormous, and the quality differences will be different from what our current work expects. It further emphasizes the need for change in libraries in the context of the emerging knowledge economy. On this topic, we want to tell that library needs to be expanded in India, everyone is connected to the library whether they are School, College, University, etc. The expansion of technology in modern society has become possible in the library. LIS departments and teachers are increasing to produce best LIS professionals to lead the 21st century librarianship. Most library-oriented artificial intelligence applications developed until today or currently under development are basic business aids of the runtime because they built today. The National Knowledge Commission (NKC) is an advisory body constituted by the Prime Minister to provide recommendations for improving India's knowledge infrastructure. As part of this Commission, a set of recommendations has been developed to improve India's long neglected library system. Today, the library services all over the world depend on technology. That is why it is important for the librarian to written and read at this time, only then he can give good services to the student, researcher, When he himself has knowledge of library technology.

Keyword: *Future of librarian, Artificial intelligence, Expert system.*

Introduction -: Libraries are going through a renaissance, both in terms of the social infrastructure they provide and in terms , Notifications, Sources, There is a collection of services etc. The word library is the Hindi version of the word library in English. Origin of the word liberi' Lighter ' Resulted from, Which means book. The history writing system of the library is associated with the methods and systems of preserving the nature of books and documents. Library This word is made up of two words - Book + Alaya. Library is the place where study material (books), movie, Leaflets, Map, Manuscript, Gramophone records and other readable material) are stored and this material is protected. A library full of books or a collection of books near a bookseller is not called a library because books are kept commercially there. The National Library of China has about five crore books and the university also has a large library. Establishment of the National Library of the Imperial Cabino Library1881Took place in AD. In addition, there are several large libraries in Japan.1713In the United States, a first public library was run in the city of Philadelphia, USA. The Library of Congress is the largest library in the United States. It was founded in Washington1800Took place in The number of texts in it is three and a half crores. In the library2,400Employees work.

This library also publishes many books from time to time and a weekly paper also comes out from here. Establishment of the American Library Association 1876 And was founded after the library, Mainly public libraries, It started developing at a rapid pace in the United States. Public Library Law 1849 And probably New Hampshire was the first state in the United States to implement this law. Each state of America has a state library. Year 1885 A Children's Library was established in New York City. Gradually, the child departments were formed in each public library. Development of school libraries also in America 20 Started in the 20th century itself. Books additionally enlightening movies, Gramophone records and latest modern materials are here for the use of the students. Establishment of the United Nations Library in the famous city of Canberra, Australia 1927 occurred in. In fact, it was a revolutionary chapter in the direction of the library movement. Establishment of Victoria Library in Melbourne 1853 Was in library science (Library science or Library and Information science) That science is management, Information Technology, Uses tools of pedagogy and other genres in the context of the library. Library science is the science under which specific procedures related to the procedures to be performed in libraries, Technicians, And processes are studied and taught. Modern library science, 'Library and Information Science' It is called because it is only the acquisition of books, Submission, Classification, Cataloguing, The panel is not limited to administration but search for information under it, Attainment, Resources, Communication, And recovery. Modern libraries are making very good use of the updated information communication technology. It is through the education of library and information science that qualified and skilled staff are prepared to organize and operate the libraries. Library science comes under the category of technical subjects and is a service related profession. This management, Information Technology, Uses the principles and tools of pedagogy and other disciplines in the context of the library. The library is a developing institution as there is a steady growth of books and other essential supplies. For this reason, it is necessary to pay attention to this fact only at the time of its establishment. History of transmission units, Organization, Management, Various technologies, Services, His duties towards the society and general activities are a broad subject based on theoretical and practical study. Its shape-type and extent varies continuously with the subject and information world. Therefore, in library science education, along with the various techniques and techniques of the library, adequate knowledge and knowledge of various library related services are also provided. of a diversification of the services and experiences they offer. In corporate environments they are playing an increasingly important role in the provision of collaborative and diverse workspaces. In communities they are evolving into hubs for education, health, entertainment and work. Libraries are encouraging people back into the physical space, through the integration of, for example, cafes, free Wi-Fi, maker spaces or child care programs. In addition, the "walls" of libraries continue to expand beyond the physical space, with online resources, social media, crowdsourcing and mobile services changing how collections and services are accessed and shared while on the go. However, these trends are not uniform across all regions, countries and contexts. In many parts of the world, access to libraries is still not the norm. Even in developed regions, not all libraries are capable of delivering the change required to survive and thrive in the long-term. Funding shortages and replacement through online service are obvious risks facing smaller, more local libraries. Despite these risks and uncertainties, trends shaping the future of libraries have the potential to reshape and reinvigorate the role they play in public,

academic and corporate settings. This report explores some of the key trends shaping the future of public, academic and corporate libraries. It outlines the implications on future design, operation and user experience; and suggests what we may expect to see, feel and do in the library of the future.

Future of Librarian - The development of the Future Ready Librarians Framework identified specific ways in which librarians could support — as well as teach and lead — strategic work in schools. Based on the same gears and language used by district leaders, the framework offers specific examples of ways in which librarians can align their practice with school and district priorities. Over the last four years, the Future Ready Librarians initiative has changed the conversation about the role of school, College, University librarians and the ways in which they lead, teach, and support student learning. To date, the initiative has both clarified strategic roles for school librarians and also engaged and empowered the librarian community to build understanding, professional capacity and visibility as leaders in schools. Most importantly, the Future Librarians translates well. Rather than competing with other standards or professional guidelines, it offers simple and concrete ways for librarians to align their practice to help solve the same challenges faced by school and district leaders. And while Future Ready Schools began in the Obama White House, the challenges of meeting the needs of future learners is, and always has been, universal.

Expectations of the future librarian among library directors and library students-

The future challenges of university libraries and key competencies of future library professionals. Five main areas of challenge are identified by the library directors with emphasis on economical concerns and focus on new services because of changing customer needs.

1. Economical challenges

There is a strong concern that the financial resources are diminishing because of the competition between the universities. At the same time the costs are increasing both when it comes to e-resources and library premises. The management of financial resources is crucial but at the same time external actors like publishers and national university politics affect the costs more than is manageable directly by the library.

2. New services

There is a shift in research processes including aspects of e-science and a networked culture among students and researchers. The library customers are part of a networked and global environment. This put special emphasis on developing services like research data management and supporting scholarly communication, including bibliometrics, social media services, and open access. Flexibility is underlined as well as being knowledgeable in knowing your research environment and integrating library services in the learning and research processes.

3. Communication and management

The importance of communicating the role and importance of the library within the university organization is underlined. It is about making the library visible beyond the physical library premises, integrating the library activities into the whole university and research community. Change management is important in this context while there is also a concern about the collaboration between

university libraries because of the competitive situation between universities on a national level in Finland.

4. Collections development

The role of physical collections is diminishing while the digital collections grow rapidly. The balance between these collections are challenging as well as keeping the collections relevant and up to date. This involves a deep understanding of the customers' needs, moving from the traditional role of collection based towards customer-based services. The changes also affect the libraries' physical spaces.

5. Personnel

New areas of competencies emerge and there might be lack of personnel with relevant skills. Recruiting competent personnel is also a challenge because of decreasing financial resources.

Innovative technologies to implement at the library of the future-

This article presents a range of relevant and useful innovative technologies to implement at the library. We focus on the technology's applicability and the benefits it could bring to the library.

Want to also know what are the current technology trends in libraries? From digital storytelling, VR to kinetic bikes and RFID technology, John Garland helps us look at how libraries are using technology to improve services for customers today.

- Big data
- Artificial Intelligence
- Black chain technology
- Internet of Things
- Library book mark App
- User-focused interfaces and application
- Augmented reality
- Digital Interfaces for printed book

- Driverless Car

- Drones

Artificial intelligence- Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. Artificial intelligence is based on the principle that human intelligence can be defined in a way that a machine can easily mimic it and execute tasks, from the most simple to those that are even more complex. The goals of artificial intelligence include mimicking human cognitive activity. Researchers and developers in the field are making surprisingly rapid strides in mimicking activities such as learning, reasoning, and perception, to the extent that these can be concretely defined. Some believe that innovators may soon be able to develop systems that exceed the capacity of humans to learn or reason out any subject. But others remain sceptical because all cognitive activity is laced with value judgements that are subject to human experience. Libraries have evolved structurally and content-wise through different eras: the ancient, medieval and modern era. In the ancient times, clay tablets and stones were used as media for transmitting information, through the medieval era of papyrus and parchments and the modern era of paper, microform and now the digital or electronic media. Libraries have acquired and maintained various forms of information resources throughout these eras so as to meet the information needs of its user communities. Similarly, a library was formally defined as a function of the physical building where books were kept for reading and other purposes. However, the definition of library today has gone beyond the physical building, it now centers on the collections and services offered, since virtual libraries have no physical walls and services could be rendered to users from remote locations. Consequently, in the effort to satisfy the dynamic information needs of its clientele at the same time uphold its relevance in this ever-changing technological society, libraries have explored, incorporated and metamorphosed through different technological revolutions of clay tablets, stones, papyrus, parchments, paper, microforms, computers, Internet, virtual libraries, library 2.0, cloud computing etc. Interestingly, artificial intelligence is the current technology that has evolved with huge prospects and promising applications in libraries. Hence, the need to also explore this tech, its pros and cons, in order to adequately maximize its rich benefits for innovative and optimal services delivery in libraries, as Corker (2013) asserted that artificial intelligent systems (robots) will be an important technology in this century. In a nutshell, the crux for applying artificial intelligent systems in libraries is the fact that they are less prone to errors unlike human beings; they can work for 24 hours/7 days without getting tired thereby freeing the librarians to do other jobs. Virtual libraries are electronic libraries that provides access to distributed information resources in electronic format to users in remote locations. It

is a term used to denote libraries without walls, an organised collection of links to various information resources on the network or Internet. It is a collection of electronic information resources in form of e-books, journals, online databases, media and other forms of data. Typically, virtual libraries provide remote access via an online portal or gateway, of information resources in varieties of contents/formats, including online databases, e-books, e-journals, e-magazines, e-newspapers etc, and provides other services traditionally offered by libraries. Digital and virtual libraries have their services fully automated. Moreover, automation is the process of using machineries to facilitate human activities and saving the human power and time. Library automation refers to the use of computers to automate the routine procedures in libraries such as cataloging, user registration, charging and discharging of books, shelf-reading etc., it the technology concerned with the design and development of the process and system that minimizes the necessity of human intervention in library operations. The main purpose of library automation is to free the librarians and library staff and to allow them to contribute more meaningfully to spread of knowledge and information. Artificial intelligence play a vital role in library automation especially in digital and virtual libraries where their resources and services are fully computerised.

Advantages of Artificial Intelligence -

- a) Can take on stressful and complex work that humans may struggle /can not do;
- b) Can complete task faster than a human can most likely;
- c) To discover unexplored things. i.e. outer space;
- d) Less errors and defects; e) Function is infinite.

Disadvantages of Artificial Intelligence-

- a) Lacks the "human touch"
- b) Has the ability to replace human jobs
- c) Can malfunction and do the opposite of what they are programmed to do
- d) Can be misused leading to mass scale destruction

Robots in Libraries- It is difficult to define clearly the word “robot” because it is often used in various ways. For example, it can be expressed as “a device that works on behalf of a human, which automatically and continuously performs some steps or procedures”. Robots can be classified as follows in terms of roles, missions, and forms. Robotics is a subfield of artificial intelligence and it focuses on the perceptual and motor tasks. It also refers to the branch of technology that deals with the design, construction, operation, and application of robots . A robot is a machine that performs automation tasks and carries out series of complex operations under the supervision of a human or automatically (autonomous) under the control of pre-defined program using artificial intelligence techniques. The term robot was first used to depict artificial people or androids coined in a 1921 Czech science fiction play. Following these, so many robot stories were written including Isaac Asimov’s robot series. Robot is “An automatically controlled, reprogrammable, multi-purpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use in automation applications.” The robots are on scrambling, rolling, flying, and climbing. They are figuring out how to get here on their own.

As libraries provide a growing array of digital library services and resources, they continue to acquire large quantities of printed materials. This combined pressure of providing electronic and print-based resources and services has led to severe space constraints for many libraries, especially academic research libraries. The goal of the Comprehensive Access to Printed Material (CAPM) is to build a robotic, on-demand and batch scanning system that will allow for real-time browsing of printed material through a web interface. The user will engage the CAPM system that, in turn, will initiate a robot that will retrieve the requested item. The robot will deliver this item to another robotic system that will open the item and turn the pages automatically.

Expert System- An expert system is a computer program that attempts to mimic human experts by the system's capability to render advice, to teach and execute intelligent tasks. Library developed expert systems will address problems in a number of areas. Most will focus on narrow domains with an emphasis on local concern. Information and referral systems will be among the first expert systems to be developed by libraries. Expert system will assume an important role in library instruction and clearing houses will allow libraries to share tutorial systems with one another. Tutorial systems may one day replace library work books and other forms of in house documentation for user assistance.

The future of expert systems in libraries will follow the evolution of expert systems as knowledge media. Expert systems, which are now clever, occasionally useful computer programs, will eventually assume an important role as a format for recording the working knowledge of human experts. Information media vary in suitability for carrying different types of message, and expert systems are now the exception. Expert Systems are the knowledge based computerized systems which play a role of intelligence interface or gateway for providing access to database and to obtain relevant information. They range in scale from simple rule-based systems with flat data to very large scale, integrated developments taking many person, years to develop. An expert system is a computer program that provides expert advice, decisions or recommended solutions for a given situation. The different components of expert systems are: Knowledge base, Inference Engine, and User Interface.

Characteristics of Expert System-

- Right on Time Reaction:
- Good Reliability.

- Flexible:
- Effective Mechanism
- The Highest Level of Expertise
- Capable of handling challenging decision & problems

Components of the Expert System

- ❖ User Interface
- ❖ Inference Engine
- ❖ Knowledge Base

Applications of Expert Systems

- Information management
- Hospitals and medical facilities
- Help desks management
- Employee performance evaluation
- Loan analysis
- Virus detection
- Useful for repair and maintenance projects
- Warehouse optimization
- Planning and scheduling
- The configuration of manufactured objects
- Financial decision making Knowledge publishing
- Process monitoring and control
- Supervise the operation of the plant and controller
- Stock market trading
- Airline scheduling & cargo schedules

Conclusion- Although there are speculations that this technology will render librarians jobless, artificial intelligence will greatly enhance library operations and services delivery, and will upload the relevance of libraries in an ever changing digital society. In addition, as it is with many emerged technologies, artificial intelligence is also viewed as thread to librarians and the touch of humans in libraries, the eventual acceptance and incorporation of artificial intelligence into library services will no doubt reveal the many potential promise it has in librarianship.

AI related recorded information on its AI technology and its utilities in various areas/subject fields. The success in Expert systems field, Natural Language Processing field, Pattern Recognition field, Robotics field has precipitated substantial commercial activity, including the formation of many ventures. The practicability of artificial intelligence in the areas such as cataloguing, classification, documentation, collection development etc appears to be improving

year after year. It is sure that in the near future artificial intelligence will occupy in all the spheres with the introduction of competent models with AI techniques. Library and Information Science will be greatly benefited by the development of the efficient expert system for technical services as well as Information processing and management.

Reference -:

- Andersen, J. (2008). Knowledge design and knowledge media. *Scandinavian Library Quarterly*, 41(1). Available at: <http://slq.nu/?article=denmark-knowledge-design-and-knowledge-media>
- Audunson, R.A. (2008). Challenges and developments in library and information science. *Scandinavian Library Quarterly*, 41(1). Available at: <http://slq.nu/?article=norway-challenges-anddevelopments- in-library-and-information-science>
- Audunson, R.A. & Gjestrum, L. Training of librarians in Oslo. *Scandinavian Library Quarterly*, 45(3). Available at: <http://slq.nu/?article=volume-45-no-3-2012-7>
- Abram, S. (2019). Robots in libraries: Technology trends that aren't that out-there anymore! Retrieved April 17, 2019 from: <https://lucidea.com/blog/robots-in-libraries/>
- Baruchson-Arbib & Bronstein (2002): A view of the future of the library and information science profession: a Delphi study. *Journal of the American Society for Information Science and Technology*, 53(5), 397-408.
- Bailey, C. W., Jr. (1991). Intelligent library systems: artificial intelligence technology and library automation systems. *Advances in Library Automation and Networking*, 4. Retrieved May 17, 2017 from: <http://eprints.relis.org/4891/1/intlibs.pdf>
- Blakemore, E. (2016). High tech shelf help: Singapore's library robot. Retrieved May 8, 2019 from: <https://www.libraryjournal.com/?detailStory=high-tech-shelfhelp-singapores-library-robot>
- Bourg, C. (2017). What happens to libraries and librarians when machines can read all books? Retrieved September 28, 2019 from: www.chrisbourg.wordpress.com
- McGraw-Hill Encyclopedia of Science and Technology. (2007). Artificial Intelligence. In *Encyclopedia of Science and Technology* (10th ed.; Vol. 2, pp. 228–230). New York: McGraw-Hill.

- . Nil's, J.Nilson. (1998) Artificial Intelligence. New Delhi: Harcourt , 280-281 3. Patrick Henry Winston. (1999) Artificial Intelligence, Addison Wesley, New Delhi: 10-12.
- Pedersen, K. N. (2006). Librarianship: From collections control to tools understanding. *New Library World*, 107 (11/12), 538-551.
- Piper, A. (2012). *Book was there: Reading in electronic times*. University of Chicago Press. 192 p.
- <http://library.iisc.ernet.in/>
- <http://www.softlinkasia.com>
- <http://www.worlib.org>
- <http://www.libsys.co.in>
- <http://www.nalanda.nitc.ac.in/>
- <http://www.libraryjournal.com/>
- <http://www.ala.org>
- <https://www.guru99.com/expert-systems-with-applications.html>.

Reena Singh

Research Scholar(Library And information Science)

Dr. Bhim Rao Ambedkar University

E.mail id- reenathakur710231@gmail.com