Challenges in Integrating Traditional Knowledge with Emerging Technologies

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Abstract: The innovations that have gained the most acceptance are known as emerging technologies. Emerging technologies include those that facilitate technical services, library administration, user services, and instructions. Libraries worldwide now have enormous potential to enhance patron availability of information and library services because to these new technology. In order to provide services for libraries and information, libraries in developed nations been utilizing cutting-edge technologies such as Web 2.0, virtual and augmented reality, robots, cloud computing, RFID, big data, institutional repositories, and drones that distribute books. There are several problems that must be fixed when combining contemporary technology with traditional indigenous knowledge. When outside experts minimize or misunderstand indigenous customs, certain cultural misunderstandings may result. Combining contemporary technology with traditional indigenous wisdom has demonstrated significant promise in the last few years for addressing the different environmental issues that confront us today.

Keywords: Opportunities, Libraries, Indigenous Knowledge, and Emerging Technologies.

I. INTRODUCTION

Information collection, compilation, archiving, retrieval, and user presentation are among the many responsibilities of libraries. This has been the primary function of libraries since the beginning of time till the current Internet era. However, at the start of the twenty-first century, a significant paradigm change occurred in the manner library and information services were delivered worldwide. It is obvious that information technology (IT) plays a significant role in all facets of human growth and influences information services as a result of the integration of new technology in library science. Librarians now go by titles like Information Officer, Information Scientist, Documentation Officer, and so on. We can visit libraries whenever it is convenient for us.
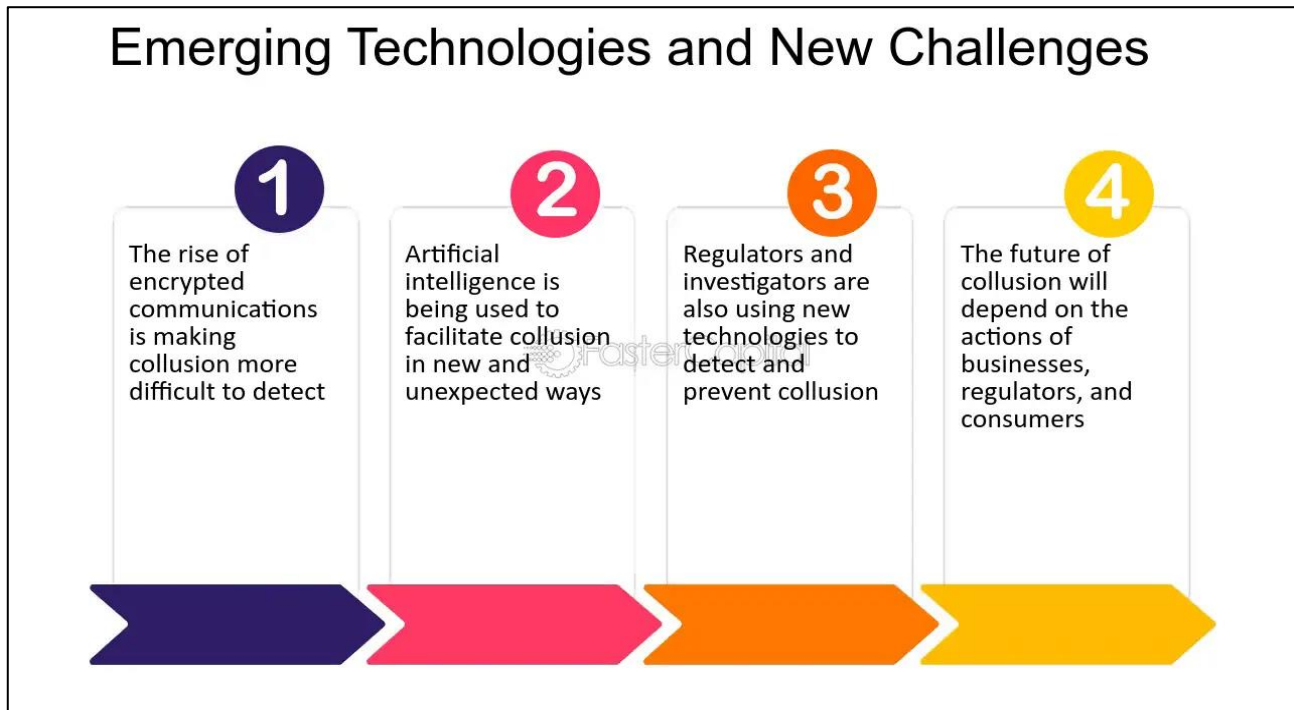
Fig 1 Emerging Technologies and New Challenges

According to Libraries are members of the International Federation of Library Associations and Institutions (IFLA). today are places where resources are kept in a range of formats and are skilfully arranged to serve the needs of individuals seeking education, information, and amusement as well as fostering individual learning and the advancement of society at large. Libraries gather, organize, and disseminate information resources in a range of media to assist members of the host communities in their learning and research endeavours.

II. REVIEW LITERATURE

Okorafor, C. N. (2010)[1] Indigenous knowledge (IK) and customs are typically oral and memory-based, meaning they are not written down. This dependence frequently resulted in distortions. Particularly in the fields of the natural resource management, the arts, music, language, crafts, theater, agriculture, and medicine, IK is important for development. Then, in order to reap the benefits of indigenous knowledge where appropriate, it becomes essential that it be recorded and shared as needed. in the worldwide distribution and interchange of knowledge for social and economic advancement. The paper outlines the difficulties and examines IK's documentation for print, video, and electronic communication formats.

Gupta, V. K. (2000)[2] The paper makes an effort to support the necessity of creating a national TKDL, which examiners of patent offices both domestically and abroad may use as evidence of the "prior art." It primarily deals with the conceptual problems associated with the development of TKDL, but an effort has also been made to identify the primary work processes in order to produce a workable implementation plan.

III. OBJECTIVES

Libraries may face difficulties integrating cutting-edge technologies with conventional knowledge in a variety of ways, such as:

- Equitable resource distribution: The literature currently in publication contains knowledge gaps about equitable resource distribution.
- Security and privacy: New technologies may provide risks including data breaches and the possibility of personal information being stolen.
- Lack of funding: Libraries might not have enough money to invest in ICT development.
- Lack of technical expertise: It's possible that library staff members lack the technical know-how necessary to operate with emerging technology.
- Low bandwidth or poor internet connectivity: Libraries may have low bandwidth or poor internet access.
- But new technologies can also benefit libraries in a variety of ways, such as:
- Cultural heritage preservation: Rare books, manuscripts, pictures, and artwork are just a few examples of the priceless cultural heritage materials that libraries can digitize and preserve with the help of technology.
- Collaboration and networking: Through webinars, virtual conferences, and online platforms, ICT can help librarians collaborate and network.
- Providing high-quality services: Libraries can provide their patrons high-quality services by utilizing new technology.

IV. EMERGING TECHNOLOGIES IN LIBRARIES

Emerging technologies possess the capacity to resolve issues and create new opportunities for development, but they are still in the early phases of growth and not yet made a name for themselves in their wide range of applications. erratic technology, hyperactive, tech-savvy user conduct, hyperconnected liberalized societies information access, redefined data security, the gradual User-centric and user-driven content and services, online and collaborative learning environments, and the digitization of business and administration at all levels are some of the factors that have shaped contemporary patterns.

- Big Data: As a result of the widespread influence of information and communication technology (ICT), scientists, researchers, and other stakeholders throughout the world are producing an enormous amount of data. Information professionals and data managers have significant hurdles when it comes to data storage, analysis, retrieval, and dissemination.
- Institutional Repository (IR): An institutional repository is a digital repository for an institution's research and intellectual output. It enables anyone worldwide to access the institution's excellent scholarship online. In other words, an IR is a service that a research organization provides to the academic and research communities it works with in order to manage and distribute the research output that those communities create in an efficient manner.
- Cloud Computing: This technology maintains data, software, and applications via centralized remote servers and the web (Internet). Without installing any software on their local workstation, users can access their personal and business files from any computer with an internet connection thanks to cloud computing.
- Internet of Things (IoT): In the current era of information and communication technologies, the internet has significantly impacted many aspects of human existence and activity. The Internet of Things (IoT) is the most advanced emerging technology for influencing library users by offering efficient services more swiftly and simply.
- Robotics: It appears that robotics can assist people in the most intelligent manner. Robots at libraries use a Web interface to browse printed documents in real time.
- RFID: The Radio Frequency Identification Device, or RFID, is a useful tool for collection management that helps with automatic object tracking and identification. The transponder of an RFID system—often referred to as a tag or microchip—is attached to an antenna. A user can obtain comprehensive information or basic data, such as an identifying number.
- Artificial Intelligence: Artificial intelligence (AI) nowadays is spreading widely. Artificial intelligence (AI) is the study of mental capacities through computational models in the modern era of science and technology.

> *Issues Precluding Libraries from Using Emerging Technologies*

Despite the many benefits that current technologies offer libraries, a number of obstacles keep them from making effective and efficient use of these resources. putting advanced technologies into practice, such as the absence of reputable research and innovation facilities and the unpredictability of 21st-century technical development.

Lack of funds, power shortages, and poor maintenance are the biggest obstacles to implementing new technologies. The quality and expense of information are both rising. Infrastructure issues, a Absence of informatics and gaining knowledge, and a absence of government support can all be linked to financial constraints, inadequate maintenance and cultural updating, and a record conversion issue.

> *Possibilities for Using New Technologies in Libraries*

Neogi and Partap (2019) list the following as some benefits of emerging technology for libraries:

- New technology enable libraries to offer faster and better services.
- It affects the creativity, problem-solving abilities, and self-perception of librarians and the library.
- It aids in processing innovations and adding value to already-available goods and services.
- It improved future opportunities and library knowledge.
- Providing prompt service is easy.
- Time is saved.

> *Traditional Medicine Digital Libraries*

Many nations are utilizing information technology to create digital repositories of conventional wisdom, both for utilize in ongoing community initiatives and to guard against knowledge infringement by means of business patents. Specifically, India has created a Digital Library of Traditional Knowledge that includes details on 36,000 formulas used in Ayurveda, the country's 5,000-year-old traditional medical system. In order to stop unsuitable patents from being granted, the information was prepared in a manner that foreign patent offices can access.

Other Countries in South Asia that are participants in SAARC have chosen to establish a digital composite library that will link the distinct Digital Libraries for Traditional Knowledge (TKDL) of each nation in response to the Indian system's success.

V. CONCLUSION

The delivery of information services in libraries has changed due to new technology; print is moving quickly from hard to soft and, in some cases, from digital. To support the argument that this transition is largely uncontrollable by evident factors such as library administration systems, the requirement is also evolving for library patrons, physically mirroring the shifting worldwide environmental circumstances. Examine in detail the use of new technology for library service delivery, the opportunities for implementing these technologies in

libraries, and emerging technologies for libraries, such as robotics, artificial intelligence, Internet of Things (IoT), radio frequency identification (RFID), and many more; among other things, it affects the creativity, problem-solving abilities, and self-perception of librarians and the library; it facilitates the processing of inventions as well as adds worth to current goods and services; it enhances library expertise and future chances; and the difficulties that restrict the use of these technologies were also thoroughly discussed.

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