

COMBINING TRADITIONAL KNOWLEDGE WITH ADVANCED LIBRARY TECHNOLOGIES: KEY CHALLENGES

Dr. Ashish A.Thanekar

Vidyasagar kala Mahavidyalaya

Email Id - thanekara@gmail.com

Abstract :

Emerging technologies are innovations widely adopted and shaping the future of services. In libraries, they support operations, management, user services, and education. Globally, advanced tools such as Web 2.0, virtual and augmented reality, robotics, cloud computing, RFID, big data analytics, and drones are increasingly used. However, combining these technologies with traditional indigenous knowledge poses challenges, including cultural misunderstandings when local practices are overlooked. Despite this, integrating modern tools with traditional wisdom has shown promise, particularly in addressing environmental issues.

Keywords : Emerging Technologies, Libraries, Indigenous Knowledge, Opportunities

Introduction :

Traditionally, libraries collect, organize, preserve, retrieve, and share information. While these functions remain central, the 21st century has brought major changes in information delivery due to information technology (Kumar et al., 2024). Librarians' roles have expanded, and libraries now provide services beyond physical walls, allowing users to access resources anytime and anywhere (Ajie, 2019).

Emerging Technologies and Challenges Modern technologies present both opportunities and challenges for libraries:

Challenges:

- **Equitable resource distribution:** Ensuring fair access to technology (Ehoniyan & Amzat, 2023).
- **Security and privacy risks:** Risk of data breaches and misuse of personal information (Hunter, 2005).
- **Funding limitations:** Restricted budgets for ICT infrastructure (Okorafor, 2010).
- **Lack of technical skills:** Librarians may lack the expertise to manage new technologies (Maina, 2012).
- **Connectivity issues:** Poor internet or low bandwidth limits digital services (Gupta, 2000).

Opportunities :

- **Cultural preservation** : Digitizing rare manuscripts, books, and artworks (Maina, 2012).
- **Collaboration**: Online networks, virtual conferences, and webinars (Kumar et al., 2024).
- **Improved services**: Faster, user-friendly, and high-quality service delivery (Ehonyotan & Amzat, 2023).

Key Emerging Technologies in Libraries :

- **Big Data** : Managing large volumes of research and user data.
- **Institutional Repositories (IRs)** : Digital archives for preserving and sharing scholarly work.
- **Cloud Computing** : Storing and accessing files online from any device.
- **Internet of Things (IoT)** : Connecting devices for efficient and interactive services.
- **Robotics** : Assisting with document retrieval, navigation, and user support.
- **Radio Frequency Identification (RFID)** : Automates collection management and enhances security.
- **Artificial Intelligence (AI)** : Supports recommendation systems, virtual assistants, and data analysis.

Challenges in Technology Adoption :

Despite these advantages, libraries face barriers such as limited funding, inadequate infrastructure, frequent power interruptions, lack of technical training, high costs, and difficulty converting traditional records to digital formats (Okorafor, 2010; Gupta, 2000).

Benefits of Emerging Technologies :

- Faster and more efficient services.
- Encourages creativity and problem-solving for librarians.
- Supports innovation and improves existing resources.
- Expands knowledge and future opportunities.
- Promotes prompt service delivery and saves time (Kumar et al., 2024).

Traditional Medicine Digital Libraries :

Many countries are creating digital libraries to preserve traditional knowledge and prevent misuse in patents. India's Digital Library of Traditional Knowledge (TKDL) documents around 36,000 Ayurveda remedies and is accessible to international patent offices (Gupta, 2000). Inspired by India's model, SAARC countries plan a joint digital library linking each nation's traditional knowledge repositories.

Conclusion :

Library services have shifted significantly with new technologies. Print materials are increasingly being replaced by digital and advanced systems. This change reflects both library

management practices and evolving user needs worldwide. Emerging technologies such as AI, IoT, robotics, and RFID enhance librarians' skills, creativity, and confidence while improving services and creating new opportunities. However, challenges remain in funding, infrastructure, training, and technology adoption.

References :

- Ajie, I. (2019). *Information service provision by librarians in the era of globalization*. Library Philosophy and Practice. <https://digitalcommons.unl.edu/libphilprac/2517>
- Ehonyotan, F., & Amzat, O. (2023). Impact of emerging technologies in libraries: Issues and opportunities. *Lokoja Journal of Information Science Research*, 1(1), 61–68.
- Gupta, V. K. (2000). Establishing a traditional knowledge digital library.
- Hunter, J. (2005). Role of information technologies in indigenous knowledge management. *Australian Academic & Research Libraries*, 36(2), 109–124.
- Kumar, N., Antoniraj, S., Jayanthi, S., Mirdula, S., Selvaraj, S., Rajkumar, N., & Senthilkumar, K. R. (2024). Educational technology and libraries supporting online learning. In *AI-Assisted Library Reconstruction* (pp. 209–237). IGI Global.
- Maina, C. K. (2012). Traditional knowledge management and preservation: Intersections with library and information science. *The International Information & Library Review*, 44(1), 13–27.
- Okorafor, C. N. (2010). Challenges confronting libraries in documentation and communication of indigenous knowledge in Nigeria. *The International Information & Library Review*, 42(1), 8–13.