
Emerging Trends and Technologies in the Field of Library and Information Science: A Study

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Abstract

The world as grown and technology also grow in daily similarly the technology growth has a great impact on libraries and their services technology has major advancement provide several solution to the libraries and last 15 years technologies is highly growth in the all field, as well as the libraries also adopted new technologies, this new technologies helps librarians and library operations providing better and improve the quality of library services. This paper focused on emerging trends and technologies in the field of library and information science like exploring the term Artificial intelligence (AI) Applications, virtual reality, Digital resource management, RFID technology, internet of things, Q.R code technology, Library automation software, Digital library software, Digital resource management, cloud computing and big data and data visualization, Mobile based services, Digital preservation and examine to improve the library service are using social media. It also discussed related topics to the advanced and changing approaches in libraries, and also explored the major benefits of using recent technologies in libraries.

Keywords

*Emerging trends, Digital resources, Artificial Intelligence, Blockchain technology, RFID
Electronic access*

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1. Introduction

Information and communication technology is the fastest-growing in the modern era, and technology grows every day. In recent day, technology has created a revolution in all fields. Similarly, technology has a significant impact on library operations and the use of all library sections. In the modern era, libraries have adopted technology for all activities and services; recently, the majority have incorporated technology into their daily operations. The technology use has increased in modern libraries therefore since technology has been implemented in every sections in the library this technology is helping the staffs and readers easily find out the information, since technologies are used in all sections of the library like circulation section, periodical section, technical section, reference section, acquisition section etc, libraries operations automatically and using technology, the libraries are able to understand the user diverse information interact with the trending way and demonstrate the value of information resource sources and services. Libraries can efficiently provide their services to user by using technology for example through computers the information need by reader can be sent to them easily and similarly through technology book can be misplaced in the library and also security of the libraries can be improved, Now day's libraries are more deepened on the technology and all most all libraries using technology, this will help libraries deliver the information to their users faster and also facilitate better information collection. In the information age, the growing facilities and tools are becoming affordable for everyone. Technology is now ready for institutions, universities, colleges, and everyone to utilise information every day. The solution to all problems in libraries is the use of technology, such as digital resource collection, because print format is more expensive and difficult to handle. Digital resources can be accessed online at any time, from anywhere, and storage is also not a problem. Information can be accessed through various technology systems, including digital devices, operating systems, networking systems, servers, and audiovisual systems. Digital information also refers to the information that has been digitised in libraries.

2. Objectives of the study

- This study mainly focused on understanding recent trends and technologies used in library and information science and their use in libraries.

3. Review of Literature

Arun kumar and Dharani kumar P (2024). Discussed in the article are recent trends and their implications for library and information services, including electronic resource management, RFID technology implications, big data visualisation, mobile-based library services, and intelligent library search. These have been explained in detail and also focused on challenges in library services for future libraries. Nagaraja Naik and Lokesh Naik (2024) in the article How current trends excel the LIS profession about the paper explore the key emerging trends in the LIS profession like artificial intelligence, the integrated digital technologies, big data, open access, and user-centred services and focus on the factors driving these changes and their implications for professionals of in the field of LIS.

Rajashekara GR and Kiran kumar doddamani(2024) Discussed in the article Current developments in LIS education and libraries about the paper focused on one of the emerging trends in LIS is the adoption of digital technologies to manage library collection and services including digital archives and online reference services and also explained collection management, electronic resource managements, cloud computing internet of things and augmented reality in the field of LIS. Bhaigyashree Boro and F.Chanchimawia (2023) in the article emerging technologies for libraries in present Digital era about the paper focused on the future technology trends in libraries as the defined the term Artificial intelligence (AI), Internet of Things, block chain, connected toys, robotics technology, unplugged, virtual reality and explain how these technologies trends can be benefits libraries and library professionals in upcoming days. Neha goel (2022) in the article Emerging Technology Trends in Library and Information Science about article focuses on recent trends and technologies in library services as Library automation, digitalisation, institutional repository, QR code and RFID technology, mobile-based services these are explained This article also focuses on integrated library systems, robotic technology and the use of social media in libraries.

4. Recent trends and technologies in the field of Library and Information Science (LIS)

Today, Libraries are swiftly adapting to meet the demands of digital society by incorporating cutting-edge technologies and services. This evolution enhances their ability to deliver efficient, accessible,

and engaging resources for users. The recent libraries are adapting and using emerging trends and technologies follows

4.1 Digital Resource Management

Digital resource means the process of maintaining electronic format information, including acquisition, organising, and providing access to through electronic devices like computers, laptops, mobiles and other electronic devices. Digital resources encompass e-journals, e-books, e-databases, e-theses and dissertations, e-newspapers, e-patents and so on. These resources can be managed through the practices and software systems used by libraries to track important information about digital information resources and use software to systematically acquire, organise, preserve and access digital information.

4.2 Implication of RFID Technology

RFID, or radio-frequency identification, is a recently trending technology used in libraries. It utilises electromagnetic fields to automatically identify and track tags attached to library items, thereby enhancing the library's theft detection system. RFID technology systems automate processes and reduce reliance on employees, enhancing the security of libraries and increasing their efficiency. RFID speeds up borrowing and retrieval operations for users. RFID, therefore, helps to save time and cost for the library.

4.3 Cloud computing

Cloud computing is the distribution of devices, services, including storage, servers, networks, databases, software, and intelligence, over the internet. These are enabling innovations, flexible resources and economical scale. Cloud computing has become increasingly popular in libraries as it offers more benefits as well as savings of money, flexibility, scalability, and accessibility. The libraries are using cloud computing for various purposes they are backup and storage of information, library management systems, digital preservation virtual reference and collaborative tools and data analysis and visualisation etc (Dr. Rajashekhar GR& Dr. Kiran Kumar,2023)

4.4 Artificial Intelligence (AI)

Artificial Intelligence is one of the recent technologies used in all fields like education,

agriculture, medicine, cinematography and so on, and this technology is one of the most trending technologies. Artificial Intelligence (AI) refers to the capability of machines or electronic devices or computers to perform tasks typically associated with human intelligence. Nowadays, libraries use AI application tools, including chatbots that respond to users' directional inquiries.

4.5 Internet of Things (IoT)

The Internet of Things has recently been the most impactful and revolutionary in all fields. The Internet of Things describes a network of physical objects, and it also impacts libraries. The Internet of Things (IoT) refers to a system of interconnected devices, sensors and machines that are linked to the internet and are capable of communicating with one another. IoT facilitates the gathering and exchange of data among devices, which can be utilised to automate processes, increase efficiency and user experience. IoT has numerous applications across different sectors like health care, agriculture, manufacturing, transport etc and libraries also used IoT technology can be staffs to improve user experience, enhance collection management and automation systems, including automated check in and checkout process.

4.6 Virtual Reality

Virtual reality (VR) is a technology that has gained significant popularity in recent years and is also utilised in various fields, including education, healthcare, gaming, and entertainment. Virtual reality is technology that creates a simulated, computer-generated environment, allowing for highly realistic interaction with it. Recent developments in virtual reality for libraries offer a unique and engaging experience. By utilising this technology, libraries can provide virtual tours of their facilities, enabling users to explore the design, services, and resources from the comfort of their own homes. Through virtual exploration, users can browse different areas of the library and familiarise themselves with the resources available to them. This enhances accessibility and encourages potential patrons to visit the library in person.

4.7 Library Automation Software

Presently libraries are use information and communication technology and most of the libraries are adopted fully automation system, to facilitate the automation of libraries the following software is

required like SOUL (Software of university library), KOHA, Easylib, E-grathalaya, E-Grathalya 4.0 etc with the help of which all sections of the library can be controlled automatically namely the reference section, circulation section, acquisition section, OPAC (online public access catalogue), serial section, classification catalogue etc. Library automation software helps to improve the effectiveness of library services, provides faster and easier access to the library collection for users, offers a quick catalogue and classification, and makes it easier to share information from one place to another.

4.8 Social Media Applications

The present generation people are most connected to social media platforms and spend more time on social media. Nowadays, people use social media for many purposes. Most users use social media for entertainment, knowledge and some use it for education. Nowadays, there are many social media platforms such as Facebook, Instagram, YouTube, WhatsApp, Email etc, with the help of these libraries, are also provide many services in recent days, like Document delivery services, Current awareness services (CAS), Selective dissemination and Access (SDA), reference services, library orientation programme, alerting services. etc. also provide.

4.9 Blockchain technology

Blockchain technology is one of the emerging technologies for the thriving industrial revolution. Blockchain technology refers to functions as a decentralised database and a peer-to-peer network that maintains a registry of transactions secured through cryptography and serves as the ledger or record-keeping component of transactions and their subsequent iteration. Recently, libraries are using blockchain technology for many purposes such as for secure transparent and decentralised applications like digital rights management, creating secure user profiles, data security and tracking assets and block chain technology has some of applications in libraries, such as digital rights management, data security and privacy, secure and transparent transactions of information and province and collection management.

4.10 Big data and Data Visualization

Big data and Data visualisation encompass the representation of substantial large data using charts, maps, and various visual formats. This method

enhances the understanding of information for users and aids in recognising trends, patterns, and aids in anomalies within large data sets. This technology is helping digital libraries to become more globalised by offering access to extensive information, thereby simplifying the process for users to discover a wealth of knowledge at their disposal.

4.11 Mobile-based library services

The library aims to achieve three primary purposes for its users through its resources and reading materials, promoting lifelong learning, enhancing literacy and sharing everyday knowledge. Mobile libraries, mobile libraries provide access to materials for individual who many not have the opportunity to benefit from them outside the physical confines of the library by using mobile applications such as whatsapp and SMS libraries can develop and facilities quick access to their information and additionally it includes a learning management system (LMS), which is software designed to monitor training materials and provide a framework for managing all aspects of learning process. A prime example of mobile-based library services is the OPAC Smartphone applications operated by SLIM software, which mainly aims to transform traditional libraries to digital libraries. (dr. M Ganesamoorthy& p. Selvakamal, 2024)

4.12 Q. R Code (Quick response) Technology

Libraries are recently utilising this technology, which helps them provide quick and efficient services to users. The emergence of information technology has led to significant advancements in QR codes, enabling straightforward access to information. Libraries are now able to link their catalogues via QR codes. By generating a QR code for a web address and positioning it thoughtfully, such as at the entrance of the bookstore, users can obtain information quickly and conveniently.

5. Benefits of using technologies for Libraries

The implementation these technologies in contemporary libraries offer numerous benefits primarily due to the efficient and rapid transmission of library information to reader from various locations facilitated by technology, additionally the storage of electronic resources within libraries allows for the accommodation of vast amounts of information, alleviating concerns regarding space limitation, furthermore libraries can be operated

automatically, addressing the issue of insufficient library staff, and readers also have the advantage of accessing library resources 24 hours a day, through use technology electronic resources can be utilized at any time via computer or mobile devices and also these technologies integration enable libraries to deliver services effectively to reader ultimately saving their time, consequently readers can obtain information from the comfort of their homes without the need for a physically visit to the library, overall the emerging technologies provide several advantages to libraries.

Conclusion

The traditional libraries are transitioning to digital libraries or smart libraries because technology is revolutionising the education sector, and the present generation of people are also highly dependent on technology. These technologies are used in libraries to provide services to readers effectively and efficiently, and also to streamline overall library activities. In the recently developed technology the name is artificial intelligence these technology revolution of all sectors like agriculture, healthcare, Education and industrial etc, and libraries also adopting this technology use AI application tools includes chat bots and chatGPT that respond to users directional inquiries and this technology is without human interaction, as libraries are use technology several advantages and evolving users needs they play the vital roles for providing quick and fast knowledge, the libraries must respond to the necessity for continues staff training by proactively overcoming these challenges, future libraries can persist in their innovation and remain vital resources for education, research and community involvement.

References

- 1) Dr. Arun kumar & Dr. Dharani kumar, P.(2024). Recent trends and their implication on library and information services, *Emerging trends in the LIS profession issues and challenges*, 111-118.
- 2) Nagaraja Naik & dr. Lokesh Naik.(2024). How current trends excel the LIS profession, *emerging trends in the LIS profession issues and challenges*, 73-86.
- 3) Dr. Rajashekara, G.R. & Dr. Kiran kumar, doddamani.(2024). Current developments in LIS education and libraries. *Emerging trends in the LIS profession issues and challenges* . 149-158.

- 4) Bhaigyashree, Boro & F, Chanchimawia.(2023). Emerging technologies for libraries in the present Digital era, *Empowering libraries connecting communities-innovation, collaboration and entrepreneurship*, 349-354.
- 5) Neha goel.(2022). Emerging technology trends in library and information science, *International Journal of Current Science*, 12(1),493-497.
- 6) Picheswarai duddu.(2018). Digital libraries, features, benefits, Issues, and their major trends to library design for LIS professionals in the digital era, *Journal of Emerging Technology and Innovative Research*,5 (8),479-491.
- 7) Ganesamoorthy, muthusamy & Sevakamal, palanisamy.(2024). Emerging technology and trends in libraries: A survey, *Conference on connecting the nation for Knowledge and cultural heritage*, 28-36.
- 8) Dr. Shilpa, B. S. & Dr. Padmamma, S.(2024). Novel practices and techniques in libraries, *Emerging trends in the LIS profession issues and challenges*, 159-168.