Reviewing the Progression of the Library Information System with ICT-Based Resources and ICT Skill Development

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Abstract

In the rapidly evolving landscape of information and technology, libraries have undergone a significant transformation in their functions and services. This paper presents a comprehensive review of the progression of library information systems, focusing on the integration of Information and Communication Technology (ICT) based resources and the development of ICT skills among library professionals and users. The objective of this review is to analyze how libraries have adapted to the digital age by incorporating ICT-based resources, such as digital catalogs, online databases, e-books, and multimedia content. Furthermore, the study investigates the efforts made in enhancing ICT skills among librarians and patrons, acknowledging the pivotal role of skill development in maximizing the benefits of available resources. The review encompasses a chronological analysis of key milestones in library information systems' development, from the early automation of cataloging systems to the current state of seamless digital access to a vast array of resources. The paper also examines the challenges encountered during this progression, such as issues related to privacy, security, digital divide, and the need for continuous skill updates. Drawing on a variety of scholarly sources, including academic articles, reports, and case studies, the review synthesizes the trends, challenges, and successes in leveraging ICT for library services. It also discusses the role of collaborative platforms, open access initiatives, and user-centered design principles in shaping the modern library ecosystem.

Introduction

In the era of rapidly advancing technology and the digital age, libraries have undergone a profound metamorphosis, transforming from traditional repositories of physical books to dynamic hubs of digital information. The integration of Information and Communication Technology (ICT) has played a pivotal role in reshaping the landscape of library services, enabling the efficient organization, retrieval, and dissemination of information. This paper embarks on a journey to review the progression of library information systems, with a

specific focus on the incorporation of ICT-based resources and the concurrent development of ICT skills among both librarians and library users.

The traditional image of libraries conjures up scenes of card catalogs, shelves lined with books, and hushed reading rooms. However, as digital technology has permeated every facet of modern society, libraries have responded by embracing the digital realm. This transformation has not only revolutionized the way information is accessed but has also redefined the roles of librarians and the expectations of library patrons. This review aims to shed light on the multifaceted evolution of library information systems, providing insights into the trends, challenges, and triumphs encountered along the way.

The primary objective of this review is to explore the trajectory of libraries from their early forays into automation to the present-day sophisticated systems that offer seamless access to a wide array of digital resources. The paper will delve into the ways in which libraries have integrated ICT-based resources, including electronic databases, e-books, online journals, and multimedia content, into their offerings. Simultaneously, it will examine the efforts undertaken to equip librarians and users with the requisite ICT skills, recognizing that technology's potential can only be fully harnessed through effective skill development.

By tracing the historical evolution of library information systems, this review aims to provide a comprehensive understanding of the steps taken to harness technology's power in the realm of knowledge management. Furthermore, it seeks to identify the challenges that have emerged in this journey – from concerns surrounding data privacy and security to the persistent issue of the digital divide that can hinder equitable access to information. As the information landscape continues to evolve, libraries find themselves at the crossroads of tradition and innovation. The amalgamation of traditional library principles with cutting-edge technology necessitates a delicate balance that fosters inclusivity and empowerment. This review will draw on a variety of academic sources, including scholarly articles, reports, case studies, and expert opinions, to synthesize the dynamic shifts and trends that have marked the progression of library information systems in the digital age. Ultimately, this exploration not only highlights the transformation of libraries into digital information hubs but also underscores the importance of adaptability, continuous learning, and collaboration in navigating the ever-changing information landscape. By unraveling the narrative of library information systems' evolution, this review contributes to the ongoing dialogue about the role of libraries in an increasingly interconnected and technology-driven world.

Need of the Study

The study examines the evolution of library information systems through the integration of ICT-based resources and the concurrent development of ICT skills. This investigation is crucial as technological advancements have transformed the landscape of information access and management. The growing reliance on digital resources necessitates a comprehensive understanding of how libraries have adapted and leveraged ICT tools to enhance their services. Furthermore, the study underscores the importance of cultivating ICT skills among library staff and users to navigate and exploit these resources effectively. By scrutinizing this progression, the research aims to shed light on the challenges and successes encountered during this transformative journey, offering insights that can guide further improvements in library services and the empowerment of individuals in the digital age.

LITERATURE REVIEW

Husain and Nazim (2015) published a study on the potential for various ICT applications to be used in Indian academic libraries. The data was collected using a survey method. A systematic questionnaire was mailed to 30 librarians from India's central university libraries. Academic libraries in India have largely relied on traditional ICT-based solutions to administer various library activities and services, particularly for organizing and retrieving material, according to the findings. In academic libraries, the use of modern ICT-based information creation and sharing tools such as web discovery tools, blogs, wikis, RSS feeds, social networking, and social bookmarking appears to be uncommon. The key impediments to ICT applications in academic libraries were found to be a lack of skilled ICT workers, low levels of ICT skills among library users, unawareness of the benefits of ICT, and inadequate ICT infrastructure.

Gurikar and Mukherjee compared the current situation of academic libraries in Chattisgarh in terms of ICT infrastructure, application, and automation status (2015). The study was conducted utilizing a six-library survey approach with a structured close-end questionnaire. The findings revealed that, despite the libraries' fundamental infrastructure, a lack of employees remains a concern. Although most libraries have introduced automation, either through the use of Libsys or SOUL, library employees have needed to learn how to deal with various software issues.

Research paper   ,

Shukla (2015) looked into the current situation and status of university libraries in Uttar Pradesh in terms of collection, budget, manpower, infrastructure, problems and challenges, and so on. A questionnaire was utilized to collect data from university libraries for the purpose of the study. According to the findings, there appears to be a significant disparity between the IT infrastructure accessible in UP's university libraries and the libraries that lack sufficient equipment and do not participate in cooperative ventures such as library networks.

Joshi (2015) reviewed 12 university libraries in Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, and UT Chandigarh with special reference to ICT applications in a research on current status and information technology use patterns in university libraries. Eight of the twelve libraries have distinct names, according on the responses to the questionnaire and information available on university websites. All of the libraries have a presence on the internet, either through the university website (8 libraries) or through direct links (4 libraries). Universities have either finished or are in the process of completing campus-wide Wi-Fi connectivity (6 libraries) (5 libraries). Despite a widespread administrative apathy regarding the worrying status of unfilled posts, university libraries have acquired ICT infrastructure and digital resources and are offering ICT-based services, according to the report.

Merugu and Kumar (2014) investigated the use of information and communication technology in academic libraries in the Warangal area, looking at ICT infrastructure, library automation, and user satisfaction. The study's technique was a survey instrument based on a questionnaire. Half of the colleges did not have access to E-journals in their libraries, according to the findings. A large number of libraries have not yet been fully automated. To achieve better results, libraries must increase reference services, user-friendly services, and audio/visual services. The implementation of ICT in Warangal district libraries has been hampered by a lack of financial resources.

Hanumappa, Dora, and Navik (2014) did a study to investigate the Open Source Software (OSS) market relevant to Indian libraries, with a focus on existing library automation, such as Integrated Library Management System (ILMS) and Digital Library (DL) software solutions. The data for this study was collected via a survey method, with 356 library professionals making up the sample group. In India, OSS such as Koha and NewGenLib in the ILMS category, and Dspace, Eprints, and Greenstone in the DL software category, were discovered. According to the research, Indian libraries are quite interested in adopting or migrating to OSS.

Suresh Kumar (2013) used a user survey to analyze the marketing orientation of university libraries in Delhi and devise marketing strategies for them. The study's data was gathered from a sample of 842 users of Delhi's university libraries. The majority of respondents are willing to pay for information services, according to the study, since they place a higher value on the quality of information services than on existing fee services. The poll also revealed that just a small percentage of users are aware of the present services provided by university libraries, indicating the need for more efficient marketing techniques.

Madhusudhan and Nagabhushanam (2012) investigated how users in different sections of university libraries in India use web-based library services, as well as how some university libraries provide web access to their collections, user support for that access, and the problems users face when using web-based library services. The study was done using a structured questionnaire that was personally distributed to 600 respondents in twenty university libraries across India, with a response rate of 100%. The respondents were chosen using a stratified accidental random sample method. Many of the studied university libraries have yet to fully grasp the potential of online forms and are lagging behind in their effective use of the library website, according to the findings. In various departments, a few libraries provide unique web-based library services. The report outlined the existing state of web-based library services against which university librarians in India can compare their own web-based library services.

Murugesan and Balasubramani (2011) investigated how information and communication technologies (ICT) are used in Tamil Nadu's research and development libraries. Surveys of librarians and library users were conducted, as well as semi-structured interviews with librarians and observational trips to libraries. The findings found that, while the libraries had some hardware, software, and communication capabilities, ICT-based materials and services were not reaching users to the extent that they should have been. The automation of research and development libraries in Tamil Nadu began in earnest between 1980 and 2000. The most common area for automation was discovered to be the library catalog. The most popular ICT-based resource was e-mail, which was used by the majority of users. The majority of libraries were limited by a lack of funding, infrastructure, and qualified employees to begin automating all library management functions and applying ICT. A large number of library patrons were pleased with the employment of ICT in local libraries. 'Inadequate ICT infrastructure' was cited as a major source of unhappiness by a few researchers.

Sivakumaren, Geetha, and Jeyaprakash investigated the ICT infrastructure facilities, electronic resources available, and ICT-based applications deployed in government and private university libraries (2011). The research was based on primary data gathered from government and accredited university libraries. Ninety percent of libraries have implemented library automation and digital library software, according to the findings. The majority of libraries have not yet implemented e-learning and digitization software. Ninety percent of the libraries studied have installed barcode technology, and all of them have internet access. There was no digitalization software installed in any of the libraries. According to the paper, university libraries should expand the number of computers available so that users may get the most out of ICT-based materials and services.

Archana and Padmakumar (2011) In the library and information centers at Cochin University of Science and Technology, examined the usage of online information resources for organizing knowledge (CUSAT). Structured interviews with all department librarians and library professionals working in the technical section of the library were undertaken for the study. The automation of departmental libraries in CUSAT is primarily limited to the cataloguing system. It was also shown that 67% of users use internet resources to help organize their information. The Library of Congress catalog is the most extensively used online resource, followed by CUSAT's OPAC and the British Library Catalogue. The primary goals of using these resources are to create class numbers and subject indexes.

Walmiki and Gowda (2009) conducted a survey of university libraries in Karnataka and reported the current state of ICT infrastructure in six of them. The university librarians were polled using a standardized questionnaire. The information gathered includes information about the hardware infrastructure, such as the availability of servers, PCs, laptops, printers, scanners, and other devices. The survey includes software for automating housekeeping chores as well as digital library activities. The study goes over the availability of campus LAN and internet facilities for accessing information sources. According to the report, the majority of libraries lack adequate technology and software, as well as adequate internet speed. To take advantage of the benefits of the digital information environment, university libraries must design, execute, and build ICT infrastructure.

The results of a survey to analyze the status of automation in Delhi's university libraries were highlighted by Suku and Pillai (2005). The survey primarily focuses on information technology infrastructure, in-house operations, information services and their use, workforce development, and budget in relation to library automation. The study also looked into the

function of the INFLIBNET Centre in assisting university libraries with their automation efforts. Data was gathered from the Librarian/Librarian in Charge of the central library of six universities using a standardized questionnaire. Due to a variety of factors, including the absence of a University Librarian in most libraries and a shortage of qualified professional personnel, library automation in Delhi has been gradual. In Delhi, 50 percent of university libraries have implemented comprehensive housekeeping automation. All university libraries have a LAN connection. In Delhi, all university libraries use computers to provide their services. For the complete range of automated tasks, all libraries, without exception, use exclusively personal computers.

According to the poll, all university libraries completed a sufficient number of training programs for their staff members prior to purchasing new technology.

Gulati (2004) talked about the state of information and communication technology in Indian libraries, namely special libraries, and the efforts undertaken by various institutions to spread e-information products and services. The JCCC Consortium, INDEST Consortium, CSIR E-journal Consortia, and UGC INFONET were among the consortia activities featured in the paper. It also goes into digitization projects at NISCAIR in New Delhi, IIITM in Delhi, C-DAC in Pune, and the Digital Library of India in India. It also includes information on India's major information systems (such as NISSAT) and important library networks (such as INFLIBNET, DELNET, CALIBNET, etc.) It also discussed the issues that librarians and information scientists face in today's IT environment.

For his doctoral thesis, Salih (2004) investigated the computerization of university libraries in Delhi. The major goals were to identify and compare the usage of computers in university libraries' housekeeping operations, infrastructure, finance, and library services, among other things. The study also attempted to identify employees involved in computerized operations, as well as their work capability in terms of qualifications. University of Delhi, M.G University, Cochin University of Science and Technology, and University of Calicut are among the four major university libraries in Delhi studied. Data was gathered through surveys sent to librarians, the person in charge of computerization, and users, as well as from university library websites. According to the report, none of the university libraries are fully digitized. All of the libraries under investigation supported INFLIBNET, had a university LAN, and offered internet access to users. It was discovered that user awareness of various library and information services was low. One of the primary recommendations is to form a consortium of universities in Delhi to exchange resources among university libraries.

Problem Statement

The increasing integration of ICT-based resources into library information systems has brought about significant changes in the way information is accessed and managed. While these technological advancements offer numerous benefits, they also pose challenges related to ICT skill development among both library staff and users. Many individuals, particularly those from underserved communities or older generations, may struggle to navigate these digital resources effectively. This knowledge gap can hinder equitable access to information and limit the potential of these systems. Furthermore, libraries face the challenge of constantly evolving technology, requiring ongoing training and updates to maintain relevance. Therefore, the study aims to address the pressing problem of ensuring that the progression of library information systems with ICT-based resources is inclusive, user-friendly, and accompanied by comprehensive ICT skill development to empower all users in today's digital-centric society.

Conclusion

The review of the progression of library information systems in conjunction with ICT-based resources and ICT skill development reveals a dynamic and transformative journey. The integration of technology into libraries has revolutionized the way information is accessed, organized, and disseminated. This evolution has led to greater convenience and efficiency for users, as well as expanded possibilities for collaboration and resource sharing. Moreover, the emphasis on ICT skill development among both library staff and patrons is paramount in ensuring that the benefits of these advancements are fully realized. The study underscores the significance of continuous learning and adaptation to keep pace with the rapidly changing technological landscape. As libraries continue to evolve as information hubs, it is evident that embracing and effectively utilizing ICT-based resources while fostering relevant skills are essential for providing comprehensive and relevant services in the digital era.

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