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IMPROVING LIBRARY SERVICES THROUGH THE USE OF ICT

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Abstract:
In today's digital age, libraries are increasingly leveraging technologies to enhance user services and experiences. This research paper explores various technological advancements and strategies employed by libraries to improve user services. It investigates the impact of these technologies on user satisfaction, accessibility, and overall effectiveness of library services. The paper also addresses challenges and opportunities associated with integrating technologies into library environments and provides recommendations for successful implementation.

Introduction:
Overview of the importance of user services in Libraries, since ages, have stored materials that enable ideas, knowledge and experiences to be passed on from generation to generation. Libraries build collections tailored to the needs and goals of the organizations they serve. For example, academic libraries, build collections for students, teachers and researchers. This collection is systematically organized by the library for use by the users. The library collection serves as an important resource in education, work, and recreation of millions of people.

Earlier libraries were considered merely storehouses of knowledge, and the librarian a custodian of the collection. Users were expected to use the libraries on their own. Librarians concentrated more on the collection development and maintenance of the library rather than promoting its use. Present day libraries are different. These are considered as educational and service institutions. Here librarians not only organize the collection, but provide assistance to library users in various ways, to support learning, interest and other vocation related activities. The assistance and services provided by the librarians can be broadly grouped as reference and information services. These services promote the use of library material, connect the users with the library resources and meet the information needs of the users.

Technological Innovations in Library Services:
Technology (ICT) has transformed library services globally. Most current information are recorded in electronic format, ICT has also contributed to the performance of librarians in their duties such as in cataloguing, reference services, circulation management, serials control, etc. ICT has contributed to the library in the following specific ways;

A) Library Management Software:

Library Management System Software is a program used to manage the catalog of a library. This helps to keep the records of whole transactions of the books available in the library. Library Management Software is the wonder of modern Technology. It makes the library works too much easier.

B) Library automation:

Library automation is the application of ICTs to library operations and services. The functions that may be automated are any or all of the following: acquisition, cataloguing, public access (OPAC and WebOPAC), indexing and abstracting, circulation, serials management, and reference.
Library Automation Software is another wonder of Modern technology for the library professionals to make the library service easier to the users.

C) OPAC:

An online public access catalogue (often abbreviated as OPAC or simply library catalogue) is an online database of materials held by a library or group of libraries. Users search a library catalogue principally to locate books and other material available at library. In simple language it is an electronic version of the card catalogue. OPAC (Online Public Access Catalogue) is the gateway to library's collection. It is served by the library through the internet or Computer. It is one of the blessings of technology. With the arrival of the Internet, most libraries have made their OPAC accessible from a server to users all over the world. User searches of an OPAC make use of the Z39.50 protocol.

D) Web Service:

A website, also written as web site, is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server. A web site may be accessible via a public Internet Protocol (IP) network, such as the Internet, or a private local area network (LAN), by referencing a uniform resource locator (URL) that identifies the site.

Library websites offer a range of benefits to users, including:

1. Access to Resources: Users can access a vast array of digital resources such as e-books, e-journals, databases, and multimedia materials from anywhere with an internet connection.

2. 24/7 Availability: Unlike physical libraries with limited operating hours, library websites are accessible 24/7, allowing users to search for and access materials at their convenience.

3. Remote Access: Users can access library resources remotely, making it easier for distance learners, researchers, and anyone unable to visit the physical library.

4. Search and Discovery: Library websites typically offer advanced search functionalities, making it easier for users to find relevant materials quickly using keywords, filters, and other search criteria.

5. Digital Services: Many library websites offer digital services such as online reference assistance, citation management tools, interlibrary loan services, and virtual exhibitions.

6. Community Engagement: Library websites may feature community events, book clubs, workshops, and other programs that encourage interaction and collaboration among users.

7. Accessibility: Library websites are designed to be accessible to users with disabilities, offering features such as screen reader compatibility, text resizing options, and alternative formats for materials.

Overall, library websites play a crucial role in providing convenient access to information, supporting learning and research, and fostering community engagement among users.

E) Radio frequency identification (RFID) :

RFID refers to the Radio-Frequency Identification. It uses electro-magnetic fields to automatically identify and track tags attached to object. The tags contain electronically stored information. RFID uses electromagnetic fields to automatically identify and track tags attached to objects. Passive tags collect energy from a nearby RFID reader's interrogating radio waves. Active tags have a local power source such as a battery and may operate at hundreds of meters from the RFID reader.

RFID Components:

Normally a RFID package for library consists of six components –

- RFID Tags
- A Self Check out Station
- A Staff check out Station
- A set of security gates
- A self-Scanner for inventory
- An Administrative Station

Advantages of RFID System:

- Rapid charging/discharging.
- High Reliability.
- High Speed Inventorying.
- Automated Materials Handling.
- Long Tag Life.
- Fast Track Circulation Operations.

Disadvantages of RFID System:

- High cost.
- Technical Glitches.
- Hassle of Carrying.
- Security Concerns.

F) Barcode Reader:

A barcode reader (or barcode scanner) is an electronic device that can read and output printed barcodes to a computer. A barcode reader, also called a price scanner or point-of-sale (POS) scanner, is a handheld or stationary input device used to capture and read information contained in a bar code. A barcode reader consists of a scanner, a decoder, and a cable used to connect the reader with a computer. Because a barcode reader merely captures and translates the barcode into numbers or letters, the data must be sent to a computer so that a software application can make sense of the data. Barcode scanners can be connected to a computer through a serial port, keyboard port, or an interface device called a wedge. A barcode reader works by directing a beam of light across the barcode and measuring the amount of light that is reflected back. The scanner converts the light energy into electrical energy, which is then converted into data by the decoder and forwarded to a computer.

G) Cloud Computing:

Cloud computing is a kind of Internet-based computing that provides shared processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, on demand access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services), which can be rapidly provisioned and released with minimal management effort. Cloud computing and storage solutions provide users and enterprises with various capabilities to store and process their data in third-party data centres. Cloud providers typically use a "pay as you go" model. This will lead to unexpectedly high charges if administrators do not adapt to the cloud pricing model.

H) Mobile library:

A Mobile library is a vehicle designed for use as a library. It is designed to hold books on shelves in such a way that when the vehicle is parked, they can be accessed by readers. Mobile libraries are often used to provide library services to villages and city suburbs that otherwise do not have access to a local or neighbourhood branch library. They can also service groups or individuals who have difficulty accessing libraries, for example, occupants of retirement homes. As well as regular books, a bookmobile might also carry large print books, audio-books, other media, IT equipment, and Internet access.

I) Book Delivery Drone:

World first drone delivery service launched in Australia. Drone is a flying machine which serves the user needs within a few seconds. People can meet

their need by ordering their demand to the library from home and meet their requirements within two minutes. They will have to order delivery to an outdoor area, and the drone will find the customer based on GPS coordinates sent from an Android (an iOS app will be built after the program is launched). The UAV will hover over the location and lower the textbooks on a retractable cable, allowing the customer to detach the parcel and the drone to be on its way. The entire process could take as little as two or three minutes. If the customer isn't there, the textbooks won't be lowered; the customer will have to hit a button on the app to lower the parcel. The drone will wait a short time for the command before flying away, and delivery will have to be rescheduled.

J) Virtual Reality and Augmented Reality In Library Services:

Emerging as revolutionary technologies, virtual reality (VR) and augmented reality (AR) are revolutionizing how library users interact with materials and improving the entire learning environment. AR superimposes digital content over the physical world, whereas VR submerges users in an entirely computer-generated reality. Libraries can develop immersive experiences, virtual tours, and interactive learning settings with great potential thanks to these technologies. VR and AR can create dynamic and captivating learning environments, they have the potential to revolutionize traditional learning experiences. Libraries can create interactive classes, 3D visualizations, and simulations pertaining to a variety of disciplines through VR/AR applications or platforms. For example, users can virtually visit historical events or ancient civilizations during a history class to improve understanding and knowledge retention. AR can enhance learning by superimposing multimedia content, interactive tests, or additional information over textbooks. Virtual Access to Rare or Restricted Collections: Rare, delicate or restricted collections are frequently kept in libraries; these collections may not be widely available to the public owing to preservation issues or physical access restrictions. Through the provision of virtual access to these collections, VR and AR provide a remedy. Rare objects, documents, and artworks can be digitally recreated by libraries and accessed in a virtual setting, enabling users to study and engage with them in more detail. Virtual tours and virtual access to rare collections are only two examples of how modern technologies are reshaping libraries and increasing the accessibility, interest, and fun of learning.

Challenges and Opportunities:

Challenges in delivering modern library services Libraries, as essential pillars of knowledge dissemination and community engagement, have significantly evolved to meet the demands of the 21st century. In this dynamic era characterized by rapid technological advancements and shifting societal needs, libraries face a multitude of challenges in delivering modernized services that cater to diverse user expectations. According to (Kaur, 2015) [11] the primary challenge and responsibility of research libraries is to collect materials and ensure their long-term accessibility, regardless of technological or ideological changes. Preserving knowledge has been the central role of libraries since ancient times, and the concept of a library as a "memory institution" continues to be a crucial service that justifies the continued existence of research libraries in society.

- **Bridging the digital divide:**

According to (National Digital Inclusion Alliance, 2021) [18] the digital divide remains a persistent challenge. Libraries must strive to provide equitable access to digital resources and technology, addressing disparities in technological literacy and internet accessibility among different segments of society. This research report by the Pew Research Centre explores broadband adoption trends and the digital divide, shedding light on the disparities in internet access and usage, which libraries often strive to address (Horrigan, 2009) [8]. This research article delves into the role of libraries in combating the digital divide through remedial and digital literacy training, emphasizing the impact on academic library patrons highlighted by (Vahid & Isfandyari, 2008) [26]. These references provide valuable insights into the digital divide and the efforts made by libraries to bridge this gap, making them important resources for understanding this crucial challenge. Information overload and curation (OCLC, 2019) [19] measured that the vast amount of information available in the digital realm poses a challenge in terms of curation and information literacy. Libraries need to efficiently curate, organize, and guide users in navigating this information overload to access reliable and relevant content. (Marchionini, 2008) [15] discusses exploratory search, providing insights into ways to manage information overload and enhance the user's understanding of the vast amount of information available.

These references offer a deeper understanding of the challenges related to information overload and the strategies employed, including curation, to address this issue effectively in modern libraries.

- **Copyright management and Intellectual property rights :**

Copyright management and intellectual property rights in libraries encompass the complexities libraries face in handling the legal aspects of copyrighted materials. This involves ensuring adherence to copyright laws, licensing agreements, and fair use provisions, while also safeguarding the intellectual property rights of authors and creators. Striking the right balance between information accessibility and copyright compliance is crucial for libraries to ethically and legally serve the needs of their users. According to the (LISEDUNETWORK, 2023) [12] libraries face challenges with copyright and intellectual property laws when dealing with digital resources. Navigating these complex laws requires careful attention to compliance. Effective systems for managing digital resources are necessary to meet these legal requirements. Additionally, educating patrons about copyright laws and intellectual property rights is crucial to prevent any potential infringement issues.

- **Addressing financial challenges in libraries :**

Financial challenges faced by libraries include limited budgets, rising operational costs, and the need to invest in digital transformation while still maintaining traditional services. These challenges can impact resource acquisition, technology upgrades, and the overall ability to meet the diverse needs of library users effectively. (Mojapelo, 2018) [17] emphasizes that the lack of funding is a significant obstacle to academic library development, hindering efforts to establish and maintain functional school libraries. (Joseph & Urhiewhu, 2016) [10] stated that funding plays a crucial role in the establishment and operation of effective academic libraries. Unfortunately, many academic libraries, particularly in Adequate funds are essential for acquiring both physical and digital resources, establishing technological infrastructure, investing in staff development, and maintaining library facilities. Unfortunately, libraries frequently face insufficient funding, which hampers their ability to develop and enhance their collections as needed.

Problems of using technology in library :

To building up a library totally technology oriented or to set up a new technology a library faced some common problem. Some of them are given below-

1. **Financial problem :**

The big problem of using technology in library in a developing country is the financial problem. Because the higher authority is not aware about the library technology and the cost of this technology.

2. **Lack of knowledge:**

There is not enough knowledge about the library technology among the library authority. For this reason the speed of technology trends in library is slowly.

3. **Lack of skilled professional :**

The Present library professionals are not well skilled about the technology. Because they are not well trained or well educated.

4. **Environment :**

The environment of a library is one of the main issues to building up a library technology oriented. Maximum Libraries of the world do not have the proper environment for using the technology.

5. **Technologist :**

There are not enough technologist working in the library sector. We may say that they do not join in the library profession for the ego problem. So enough technologists is one of the main problem.

6. **Lack of up-to-date information :**

The librarian of the present age does not have the tendency of getting up-to-date information, which sometimes affects the library service.

7. **Inexperienced staff :**

The maximum staff of library service in the modern age is not well experienced. They do not want the new technology because they have the risk of losing their job.

8. **Copyright :**

Library cannot digitalize all the documents of its collection because of copyright law.

Recommendations :

To overcome the barriers or problem we can follow the following instruction.

1. **Train the staff :**

If we organize the training program for the staff of the library for the development of their skill, it is possible to make the library technology oriented.

2. **Inform the higher authority about the technology :**

We can inform the higher authority about the benefits of the use of technology, it can be fruitful for the development of the library to make technological.

3. **Increase budget :**

The budget on the library service should be increase.

4. **Recruit the skilled personnel :**

The recruitment process should be completed properly. No nepotism should be allowed. Dishonest way should not be maintained in the time of recruitment.

5. **Recruit the technologist to operate the technologies :**

Recruit the number of technologist to operate the technological instrument.

6. **Building up the proper infrastructure :**

The library authority should build proper infrastructure for setting up the technological instrument or machine.

7. **Copyright law :**

Copyright law should be loose for the library.

Conclusion :

In the 21st century, libraries are confronted with an array of challenges that are transforming the very essence of their existence. The challenges span a wide spectrum, from navigating the intricate world of technology to adapting to evolving user expectations and confronting budgetary constraints. The library's role in society has been more crucial. To continue fulfilling this role effectively, libraries must remain agile, adaptive, and technologically adept. They must become not just storehouses of information but dynamic spaces that foster learning, critical thinking, and inclusivity. The recommendations presented in this paper offer a roadmap for libraries to navigate this new terrain successfully. By embracing technology, understanding and meeting user needs, forming strategic partnerships, advocating for funding, investing in staff training, and promoting information literacy, libraries can evolve and thrive in the 21st century. With dedication, innovation, and a commitment to their mission, libraries can not only overcome these challenges but also emerge as even more vital and indispensable pillars of knowledge, education, and community engagement in the 21st century.

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