

The Role of Mobile Technologies in Modern Library and Information Centers

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ABSTRACT

The use of globally mobile technologies in modern libraries is approximately 70%. Mobile and wireless application development has made significant strides in recent years. This rapid advancement in mobile technology has prompted librarians to rethink, redesign, and integrate new services in line with technological changes. Mobile phones have evolved beyond simple communication devices; they now serve as gateways to a wealth of information, offering services such as email, web browsing, video chatting, and more. With the widespread use of smart phones, users can access data anytime and anywhere. Furthermore, devices like the iPad and iPod have brought social media and entertainment directly into the palm of our hands. Given this evolving landscape, mobile technologies present a valuable opportunity for libraries to enhance their services and strengthen user engagement. This paper explores the concept of mobile technology, its necessity, benefits, challenges, and barriers.

KEYWORDS: Mobile Technology, Library Services, Requirements for Implementing Mobile-Based Services, Limitations and Barriers, Solutions.

1. INTRODUCTION

For many organizations, the decision to adopt mobile applications is inevitable. Why embrace mobile technology? What benefits will it bring to the organization and its users? Is it financially viable for libraries to deploy mobile applications? These are some of the key questions libraries must address. Unfortunately, there is no one-size-fits-all solution. As Mallick (2013) indicates out, the answer varies for each organization.



Fig 1: Mobile technologies in modern library

Today, mobile technology is transforming how we communicate, teach, learn, entertain, and make decisions. Modern mobile devices are capable of running sophisticated software, playing rich multimedia content, and providing advanced user interactions through cloud services—all on a small chip (see Figure 1). Libraries have begun expanding their services by offering mobile access to their websites, providing 24/7 mobile reference services, online public access catalogues (OPAC), and both free and paid access to e-books, e-journals, videos, audio, and other multimedia content on the go.

We can now access and share information at any time and from any location thanks to the internet, which has completely changed the way we live. Accessing information is considerably simpler with mobile connectivity than it is with conventional desktop or laptop PCs. Due to the broad availability of wireless Wi-Fi, many mobile devices are constantly in use. Multimedia tools, GPS systems, multi-touch screens, Bluetooth, Wi-Fi, and other technologies have become essential components of the mobile ecosystem.

Libraries, once primarily repositories of physical books, are now social institutions that connect people to both each other and information. A large percentage of library users now own smart phones, providing an opportunity for libraries to offer enhanced services. Mobile devices and services are offering users unprecedented access to technological library resources. Library collections are no longer limited to physical shelves; instead, they are available as online streamed content, accessible on-demand. By embracing mobile technology, libraries are taking a major step toward providing round-the-clock services, exemplifying the “Libraries in Hand” trend for the digital age. Librarians, too, have embraced this technological revolution, striving to understand its impact on information access. Although mobile learning (m-learning) is still in its early stages in India, the rapid proliferation of mobile phones, PDAs, and other devices indicates that this platform holds significant potential for the future of libraries in the country (Schwarz, 2004).

2. LIBRARY SERVICES ACCESSIBLE VIA MOBILE TECHNOLOGY

SMS Notification Services/Library Instant Access: Libraries frequently employ SMS (Short Message Service) to improve service delivery. In order to provide quick and easy access to services, several libraries have integrated SMS capabilities using automation software. Users can receive SMS warnings concerning overdue books, reserved items, and related fines. In order to keep users informed and involved with library services, they can also receive reminders to pick up requested books, dates for loan renewals, and other pertinent updates (see Figure 2).



Fig 2: Library Services Accessible via Mobile Technology

Formal Education, Distance Learning, and E-Learning: Mobile learning (M-Learning) expands educational opportunities, particularly for individuals who are unable to attend traditional learning environments due to travel, work commitments, or household responsibilities. As Aldrich (2010) notes, M-Learning enables users to learn at their own pace, free from the constraints of fixed class schedules. Mobile technology allows education to be accessed at any time and in any place—whether during breaks, before or after work shifts, at home, or while on the go. For users in remote or rural areas, mobile learning offers a more affordable alternative to eLearning platforms that require personal computers and broadband connections. The widespread availability of mobile phones means that learners can access educational content using devices they already own, making mobile technology a powerful tool for broadening access to education.

3. MAKING USE OF MOBILE TECHNOLOGY IN LIBRARIES

Database Browsing: Libraries are increasingly leveraging mobile devices to connect with users. As Aldrich (2010) explains, creating a library mobile application (App) allows users to easily access library hours, view their account details, browse new arrivals, and search library databases from anywhere at any time. This offers users the convenience of interacting with library resources on the go.

My Library: “My Library” represents a personalized space where users can access information tailored to their interests and needs. According to Breeding (2014), users can receive alerts, check their records, request items, track

inter-library loans, and set up email notifications for new books or articles. This feature enhances user engagement by giving them more control over their library experience.

E-Resources with Mobile Interfaces: Publishers are now offering content such as e-books, audio, and video that are accessible on mobile devices, making it easier for users to access library resources anytime and anywhere Aldrich, (2010). Access to a vast array of electronic resources, such as e-books, e-journals, web databases, and streaming articles, is made possible by mobile technology. This content is available for users to watch online or download for offline usage. Libraries can also disseminate information to users through Multimedia Messaging Services (MMS). According to Breeding (2014) a lot of e-book publishers offer library services via mobile devices like iPads, Kindles, and others around-the-clock, with or without subscription costs. This guarantees that users have access to important resources at all times.

4. MOBILE PHONE LIBRARY SERVICES

Mobile Document Supply: The mobile environment opens up new possibilities for delivering documents and scanned images or files to users upon request. This feature enables users to receive necessary materials directly on their mobile devices, enhancing accessibility and convenience.

Audio/Video Tours: Libraries can offer audio or video tours of their facilities, allowing users to virtually explore the library's layout, book stacks, and available services. This enhances user experience, particularly for those unable to visit in person.



Fig 3: Mobile Phone Library Services

New Title Previews: Leveraging mobile technology, libraries can broadcast information about newly arrived items in various formats, along with brief details such as introductory pages or summaries. This helps keep users informed about the latest additions to the library's collection.

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Library Catalogue Service: As Malathy and Kantha (2013) highlight, libraries can provide a mobile-based catalogue service, allowing users to search for information at their convenience. This feature offers flexibility, enabling users to access the catalogue anytime, anywhere, using their mobile devices.

News & Events: Libraries can use mobile devices to keep users informed about important events such as orientation programs, stock verification, and lectures on special topics, recent scholarly works, and awards. This helps ensure that users stay up to date with library activities and opportunities.

User Suggestions: Librarians can receive suggestions from users via mobile phones, eliminating the need for users to visit the library or write down their requests in a register. As Saxena and Yadav (2013) point out, this streamlines the process and enhances communication between users and library staff.

- Mobile Devices Used in Libraries:
- Smart Phones
- PDAs (Personal Digital Assistants)
- Cell Phones
- iPods & MP3 Players
- Tablets

4.1 Pre-requisites for Implementing Mobile-Based Library Services:

- I. It is essential to plan, analyze, and assess the current library services and the services to be offered on mobile devices.
- II. Libraries must acquire the necessary software and hardware to ensure smooth operation and service delivery.
- III. Both physical and virtual environments should be provided to support the use of mobile devices in the library.
- IV. Libraries must ensure compatibility with the various mobile phones and networks used by their patrons to effectively deliver services.
- V. Optimizing the library's OPAC (Online Public Access Catalogue), website, and databases for mobile devices is crucial, as well as introducing new services wherever feasible.
- VI. Security and authentication measures are a major concern, as web content is shared 24/7, requiring robust protection of user data.

4.2 Advantages of Implementing Mobile Technologies in Libraries:

- ✓ Since users are already familiar with their personal mobile devices, they can easily access information, making library services more user-friendly and convenient.

- ✓ Users can directly interact with library staff for queries, creating a sense of personalized service.
- ✓ Information accessible at any time and from anywhere, users can develop a habit of continuously gaining knowledge without needing to visit the library in person.
- ✓ Mobile services save users time, as they no longer need to write down information or wait in queues at circulation counters to retrieve resources.
- ✓ Libraries can encourage users to contribute content, such as notes or images, through mobile services, which can be valuable to others.
- ✓ Mobile communication, combined with GPS, allows users to easily locate documents within the library, enhancing navigation.
- ✓ Documents previously accessible only within the library can now be accessed via mobile devices, offering limitless access to data.

4.3 Drawbacks of Mobile Technology:

- Mobile networks may have slower transmission speeds compared to wired connections.
- Internet usage charges may make mobile services less cost-effective.
- A sufficient budget must be allocated for implementing mobile-based library services.
- Library administrations need to be adaptable and proactive in embracing mobile technology.
- Awareness and training for both library professionals and users are necessary to successfully implement mobile services.
- The small screens of mobile devices can make navigation and content viewing challenging.



Fig 4: Drawbacks of Mobile Technology

4.4 Mobile Technology Limitations and Barriers:

While mobile technology offers great potential for enhancing library services, several limitations must be addressed (Lori, 2011):

1. Limited memory capacity of mobile devices.
2. Mobile technology can be expensive in relation to the cost of large-scale resources.
3. Issues surrounding content ownership and licensing agreements.

4. Trust and security concerns regarding user data and content.
5. Protecting readers privacy is critical in a mobile environment.
6. Lack of awareness and familiarity among staff with mobile technologies can hinder implementation.



Fig 5: Mobile Technology Limitations and Barriers

5. SOLUTIONS

Develop expertise in using the latest mobile devices and technologies to stay up to date with advancements. Foster partnerships and collaborative relationships with colleagues and other professionals in the same field. Support staff development by organizing regular seminars and workshops on emerging trends in library and information science. Educate users about the availability of free mobile books and resources offered by various organizations worldwide. Create opportunities for building local expertise and encourage discussions by offering targeted training sessions. Establish a strong infrastructure and foundation for integrating mobile services within the organization. Keep library websites updated with the latest trends, or disseminate information through blogs or newsletters. Encourage and reward innovative ideas and plans from both staff and users to inspire creativity and progress. It also outlines strategies for effectively implementing mobile technology in libraries, which include:

- [1] Stay current with the latest mobile devices and technologies.
- [2] Foster partnerships and collaboration with colleagues to enhance mobile technology services.
- [3] Educate users about the numerous free mobile book initiatives available.
- [4] Provide opportunities for local expertise development and promote discussions through training sessions.
- [5] Establish a strong infrastructure and foundation for the integration of mobile services within the organization.
- [6] Regularly update websites with emerging trends in the field, or share information through blogs and newsletters.
- [7] Encourage and reward innovative ideas from both staff and users.

CONCLUSION

New mobile devices are continuously being introduced, and wireless networks now provide data access from nearly any location. In essence, mobile and wireless technology has matured to a point where it is ready for widespread adoption. The modern world is defined by dynamic ideas and ongoing technological advancements. Mobile phones have become essential tools for daily activities in today's world. Libraries are beginning to establish a strong

relationship with mobile technology, aiming to assist users and librarians through mobile interactions. Therefore, it is crucial for libraries to remain adaptable, embrace new technologies, and develop innovative connections with their users. When effectively implemented, mobile technology can empower libraries to offer 24/7 and 365 days “Libraries in Hand” services, enhancing accessibility and user engagement.

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