



Mobile Technologies For Academic Libraries, Library Mobile Applications, M-OPAC

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Abstract:

In the digital era, with the increasing popularity of smartphones and the rapid evolution of mobile technologies, the way libraries provide and access information is undergoing significant transformation. Academic libraries are extending their services beyond physical spaces by adopting mobile platforms, social media tools, and dedicated mobile applications to enhance student engagement and promote a culture of reading. The integration of library mobile applications and Mobile Online Public Access Catalogues (M-OPACs) has enabled users to conveniently search, reserve, and access resources through their handheld devices.

This study explores the role of mobile technologies in academic libraries with specific focus on library mobile applications and M-OPAC. It examines their features, benefits, and challenges, and highlights how these tools contribute to creating seamless, user-friendly library experiences. The paper also discusses implementation challenges such as usability, platform compatibility, and data security while emphasising their potential to transform academic libraries into flexible, accessible, and digitally inclusive spaces.

Keywords: *Mobile Technologies, Academic Libraries, Library Mobile Applications, ICT, Web-OPAC, M-OPAC System, Digital Library Services.*

Introduction:

Mobile technologies have emerged as powerful tools for reshaping academic libraries by integrating portable and always-connected devices such as smartphones and tablets into library services. These devices enable students and researchers to access information and resources anytime and anywhere, thereby overcoming traditional access barriers. Wireless technologies, coupled with smartphones, are now inseparable from modern life and continue to transform the way people communicate, connect, and seek knowledge.

Library mobile applications have extended library services directly to users' handheld devices, providing features such as

digital library cards, e-resource access, push notifications, reservations, and interactive catalogues. Similarly, Online Public Access Catalogue (OPAC), once accessible primarily through computers, has evolved into M-OPAC (Mobile Online Public Access Catalogue), a mobile-friendly platform that enables resource discovery and management with greater efficiency.

This paper discusses the role of mobile technologies in academic libraries with particular emphasis on the adoption of library mobile applications and M-OPAC, their advantages, challenges, and prospects.

Literature Review:

The impact of mobile technologies on academic libraries has been widely studied in the global and Indian contexts. Researchers agree that mobile platforms are gradually becoming central to library services, offering enhanced flexibility, accessibility, and user engagement. Early studies on mobile-enabled library services highlighted the adoption of SMS-based notifications for overdue reminders and circulation alerts. With the advent of smartphones, these services expanded to mobile-optimised websites and dedicated apps offering features such as catalogue searches, account management, and e-resource access (Kumar & Singh, 2017). Several studies, including those by Borrego (2018), observed that students increasingly expect seamless access to academic resources through mobile devices. Mobile applications, with features such as single-window searches, personalised dashboards, and integration with institutional repositories, have emerged as effective tools to meet these expectations.

In India, initiatives like the **National Digital Library of India (NDLI)**, **IIT Delhi's Single Window Search**, and **IIM Ahmedabad's mobile platform** have demonstrated how academic institutions are leveraging mobile technologies to broaden access and ensure inclusivity. Studies by Ramesh and Joseph (2020) have emphasised that these tools not only improve user satisfaction but also increase the visibility of underutilised resources. Research on M-OPAC has particularly underscored its role in offering mobile-friendly catalogues with advanced search options and user-oriented features such as online reservations, transaction history, and QR-code enabled check-ins (Sharma, 2019). However, challenges such as limited budgets, technical expertise, and data security concerns

have also been highlighted in the literature (Patel, 2021).

Thus, existing scholarship confirms that mobile technologies and M-OPACs hold transformative potential for academic libraries, though their adoption requires careful planning and resource allocation.

Objectives:

The primary objectives of this study are:

1. To examine the role of mobile technologies in transforming academic library services.
2. To study the concept, functionalities, and advantages of M-OPAC in academic libraries.
3. To assess the challenges in the implementation of mobile-based library services.
4. To highlight the future prospects of mobile technologies for academic libraries in India.

Methodology:

The study is based on **secondary data sources**. Information has been collected and analysed from research articles, conference papers, academic reports, library manuals, and relevant online resources. Various case examples such as NDLI, IIT Delhi, NITI Aayog e-Library, and IIM Ahmedabad mobile platforms have been referred. The methodology followed is qualitative and descriptive in nature. By synthesising insights from published literature and institutional practices, the paper attempts to evaluate the usability, advantages, and challenges of mobile technologies and M-OPAC in academic libraries.

Mobile Technologies In Academic Libraries:

Mobile technologies have become integral to the functioning of academic libraries, enabling access to resources and services beyond physical and temporal boundaries. The increasing penetration of smartphones and wireless connectivity has redefined how users search, retrieve, and interact with information. Academic libraries worldwide are progressively adapting their services to accommodate this shift.

Mobile platforms are now being utilised for:

- Creating and managing user accounts for access to library services.
- Searching and saving references for later use.
- Reading articles, newspapers, abstracts, and entire digital collections such as e-books and e-journals.
- Accessing OPACs to locate resources in real time.

In addition, academic libraries are leveraging mobile technologies to offer services such as SMS alerts for due dates, mobile-optimised websites, and instant reference support via email, chat, and text. These tools facilitate short and interactive exchanges, making them well-suited for handheld devices. The adoption of mobile solutions not only enhances accessibility but also promotes active user engagement with academic resources, aligning library services with the digital habits of contemporary learners.

Library Mobile Applications:

Library mobile applications provide a unified and user-friendly platform for accessing digital resources and managing library services anytime, anywhere. By integrating features such as e-resource

discovery, account management, and catalogue searches, these applications offer seamless navigation and personalised services.

A key advantage of mobile apps lies in their ability to integrate with native device functions such as GPS, QR code scanning, and push notifications, thereby enhancing user convenience. Moreover, mobile apps support self-service functionalities, enabling users to conduct transactions independently and reducing reliance on library staff or shared devices.

Selected Examples of Library Mobile Applications in India and Abroad:

- **National Digital Library of India (NDLI):** Sponsored by the Ministry of Education, NDLI provides a vast digital repository of multilingual and multidisciplinary resources accessible at all educational levels.
- **Library of Congress App (USA):** Offers access to a wide range of historical collections, including photographs, maps, and recordings. It also supports visually impaired users through the BARD service.
- **IIT Delhi Single Window Search:** Provides discovery services integrating multiple subscribed e-resources through a unified interface.
- **NITI Aayog e-Library:** A mobile library platform offering OPAC access, reference services, inter-library loan, and integration with networks such as DELNET.
- **IIM Ahmedabad App:** Provides access to faculty directories, e-resource lists, doctoral theses, publications, and consortium resources.

These examples illustrate how mobile apps expand the scope of library services, encourage the use of both popular and lesser-known resources, and create a more user-centred library ecosystem.

M-Opac: Unlocking Knowledge With A Tap:

The Mobile Online Public Access Catalogue, commonly known as **M-OPAC**, is a mobile-optimized version of the traditional OPAC system, designed to meet the needs of today's smartphone-centric users. Unlike conventional OPACs that require desktop access, M-OPAC provides a **seamless and interactive mobile interface** for searching and accessing library resources anytime, anywhere. It allows users to explore library collections efficiently, making the process of finding, reserving, and managing books simple and convenient.

Through M-OPAC, users can search for books and other resources by **title, author, publisher, subject, keyword, call number, ISBN, or publication year**. By providing these multiple search options, M-OPAC enhances the precision and speed of information retrieval, supporting academic research and learning effectively. The app is particularly useful for students, researchers, and library users who require instant access to library resources without physical visits.

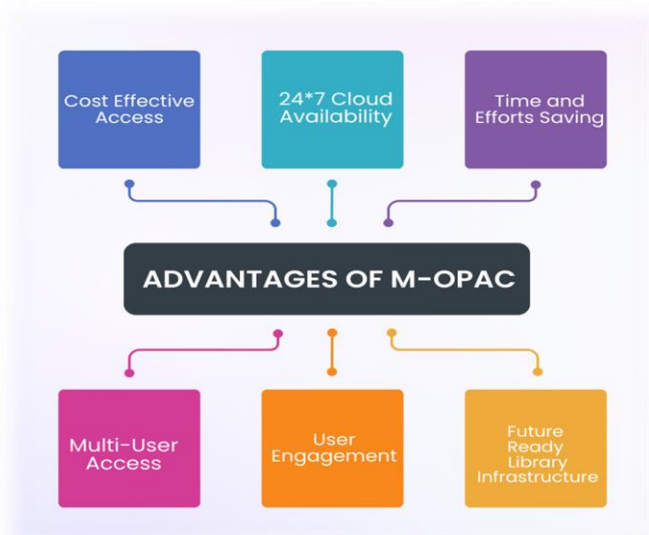
Key Features of M-OPAC:

- **Book Transaction History:** Maintains a complete record of all books issued and returned by a user, providing an overview of library usage throughout the academic year.
- **Advanced Book Search:** Users can access the library's cloud database to search for materials using multiple filters such as title, author, keyword, subject, call number, and ISBN. This feature ensures that users can locate even rare or specific resources with ease.
- **Online and Remote Access:** M-OPAC can be accessed from any location with an

internet connection, allowing users to interact with library resources even while off-campus.

- **User-Friendly Interface:** The app is designed for simplicity and ease of navigation, ensuring accessibility for users of all age groups and technical skill levels.
- **Books Issue Information:** Displays detailed information about issued books, including issue and due dates, helping users to track and manage their borrowing efficiently.
- **Online Reservation of Books:** Users can reserve books in advance with just a few taps, reducing the need for physical visits and streamlining the borrowing process.
- **Dues Information:** Provides real-time updates on pending dues, including overdue items and fines, promoting timely returns and better accountability.
- **Search History:** Maintains a record of previous search queries, enabling users to revisit earlier searches quickly and save time.
- **Shelf Browse:** Simulates physical browsing of library shelves by displaying resources in classification order, helping users to locate items as they would in a physical library.
- **QR Code Integration:** Users scan a QR code when entering or leaving the library, allowing precise tracking of library visits and usage. This feature also helps library staff monitor daily footfall and user engagement.
- **New Books Information:** Keeps users informed about newly added books, including title, author, publisher, and the number of copies, encouraging exploration of updated collections.

Advantages of M-OPAC:



M-OPAC offers several advantages, making library services more accessible and modern. It provides **cost-effective access** through smartphones, eliminating the need for desktops or terminals. With **24/7 cloud availability**, users can reach resources anytime, anywhere. Its features save **time and effort** by enabling quick book searches, reservations, and tracking, while **multi-user access** ensures resources are available to many simultaneously. The app also boosts **user**

engagement through multimedia integration and positions libraries with a **future-ready infrastructure**, supporting digital transformation for mobile-first users.

M-OPAC, therefore, represents a significant step towards the digital transformation of libraries, aligning with the expectations of mobile-first users. Challenges Of M-Opac And Library Mobile.

Application:



M-OPAC and library mobile applications, despite their benefits, face key challenges. Technical issues include device compatibility, internet stability, data security, and system integration. User challenges involve low digital literacy, resistance to change, and outdated devices. Administrative and financial

constraints arise from high costs, need for trained staff, and frequent updates. Other concerns include user engagement, scalability, and the digital divide, all of which require careful planning and support to ensure effective use.

Prospects Of M-OPAC And Library Mobile Applications:

M-OPAC and library mobile applications are set to make academic libraries more accessible, efficient, and user-friendly. They provide wider accessibility, enabling users to access resources anytime and anywhere. Emerging technologies like AI-driven search and personalised recommendations will improve resource discovery. Interactive features, multimedia content, and notifications will boost user engagement, while cloud-based scalability ensures 24/7 access and resource sharing across libraries. These platforms also support lifelong learning and enable data-driven management for better planning. Overall, M-OPAC is a key tool for modernizing academic library services.

Conclusion:

The rise of mobile technologies has revolutionised the way libraries deliver and manage their services. Smartphones, once viewed merely as communication tools, are now indispensable for academic engagement and knowledge discovery. By adopting mobile applications and M-OPAC systems, libraries have positioned themselves as dynamic, user-centred, and technologically progressive institutions.

In India, initiatives such as NDLI, IIT Delhi's single-window search, and IIM Ahmedabad's mobile platform reflect a growing trend towards mobile-enabled library ecosystems. However, challenges such as financial constraints, technical expertise, usability issues, and data security remain significant. Despite these limitations, the benefits of mobile technologies—enhanced

accessibility, improved user engagement, and cost-effective service delivery—clearly outweigh the challenges.

Looking ahead, the integration of M-OPAC and library mobile applications will be vital in making library collections available to students round the clock. As mobile technologies continue to evolve, academic libraries must strategically embrace them to remain relevant, inclusive, and responsive to the learning needs of future generations.

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