



Mobile Technology Based Services in Academic Libraries: a descriptive study

ACADEMIC LIBRARY RUNWAY ON MOBILE TECHNOLOGY

Dr. Nandkishore Patidar, Associate Professor

Library & Information Science, SSSUTMS, SEHORE, M.P.

Email - drlib16@gmail.com

Abstract:- Mobile technology is reshaping the delivery of information services in higher education, and academic libraries are no exception. As mobile devices have become an integral part of everyday life, they are changing how people connect, communicate, and access information, prompting libraries to reconsider and redesign their service models. This paper examines the potential of mobile technology to strengthen the relationship between academic libraries and their users, to extend enhanced, user-oriented services, and to enable outreach to remote users who were previously difficult to reach because of the absence of a suitable medium. The paper discusses the need for mobile technology in academic libraries, together with its advantages, drawbacks, barriers, and possible solutions for effective implementation, and explores the infrastructure required for academic libraries to provide mobile-based services to their users.

Keywords:- Mobile technology, Virtual access library, SMS notification services, Mobile document supply, E-resources

Introduction:- Over the past few decades, some technological changes have emerged gradually, with an incremental impact on higher education. In other cases, technological changes—such as the introduction of Web browsers—have a major, and arguably revolutionary, impact on higher education and society more broadly within relatively short periods. Since individuals have used devices such as laptops and mobile phones for decades, one could argue that the impact of mobile device use on general behavior, and on higher education in particular, has been relatively gradual.

On the other hand, as devices with new features continue to emerge and wireless connectivity becomes almost ubiquitous, higher education and libraries are also on the way to adopt mobile technology. Mobile technology has made communication and information access convenient and timely for users, whether at home, in the office, or on the move, through cellular phones or personal digital assistants (PDAs). Today's cellular phones offer more features and capabilities than ever before—including MP3 players, picture messaging, and streaming video—and have become increasingly data-capable.

Libraries are social institutions that connect people with people, and people with information, they are increasingly no longer confined to physical spaces. Doing so can help both novice and experienced librarians remain relevant in an increasingly mobile technology. Librarians need to stay aware of ICT change, look ahead, and prepare for the future of library-mobile interaction. Librarians must keep pace with this trend and integrate mobile technology into their services to deliver an enhanced user service.

Mobile devices and services offer a connection to access e-books and multimedia content from a local library. Google and Apple both has increasingly upgraded its desktop experience with its mobile devices. Beyond convenience, mobile technologies present new opportunities for libraries to promote access and extend their reach.

Just as the digital and technological revolution has significantly affected the mission and methods of libraries, this same revolution is to crucial in present time. Books and journal articles are no longer simply checked out, read, and returned: multiple users can use them. It is no longer sufficient for libraries to maintain the expansion, creation, and preservation of collections and services have taken on new meaning.

Objectives of the Study:- The present study was undertaken with the following objectives:-

- To become familiar with the concept of, and issues associated with, mobile technology, and to identify the facilities it offers to libraries.
- To identify the advantages provided by mobile devices for library services.
- To identify the barriers and limitations affecting the delivery of library services through mobile technology-based devices.
- To identify possible solutions for overcoming these barriers and limitations.

Review of literature:- Mills (2009) published a research report titled “M-Libraries: Information Use on the Move,” based on an online survey of students and faculty at the University of Cambridge and the Open University, UK. The study found that respondents considered the following services most useful when accessed via mobile phone: opening hours, location maps, contact information, the library catalogue (OPAC), and borrowing records. Booth (2009) published a research report, “Informing Innovation: Tracking Student Interest in Emerging Library Technologies at Ohio University,” which concluded that library tools such as texting, mobile browsing, and web calling were perceived as highly usable in a library service setting by a smaller proportion of respondents, and as potentially usable by a larger proportion.

The ECAR Study of Undergraduate Students and Information Technology (2008) examined the technology behaviours, preferences, and attitudes of undergraduate students in higher education. It found that two-thirds of respondents owned an internet-capable cell phone, although only 30.8% reported using it to access the Internet, with cost cited as the chief reason for non-use.

Todd (2008), in the study “Handheld Librarians: A Survey of Librarian and Library Patron Use of Wireless Handheld Devices” conducted for collection development at Bradley University, found that librarians—rather than patrons—more strongly perceived the need for wireless device access. Ryerson University Library (2008) conducted a survey of library patrons’ cell phone and mobile device usage and found that, of the eleven library services listed in the survey, more than 50% of respondents indicated they would likely use six of these services via their mobile phones. Karim, Darus and Hussin (2006) published a peer-reviewed study examining the perceptions and nature of wireless phone use among students at two Malaysian universities. Although conducted some years earlier, the findings remain relevant to understanding which library services students are likely to want to use.

Methodology:- This study adopts a descriptive and observational research design. It draws on printed and electronic documents related to the topic, supplemented by informal observation of, and discussion with, experienced professionals in the field.

Library Services that Can Be Provided to Patrons via Mobile Technology:-

SMS Notification Services:- Libraries can provide alerts on the latest news, events, and notices via SMS and MMS to users wherever they may be. Users can be notified instantly of alerts such as the arrival of new books, requested or indented documents, the availability of reserved documents for collection, overdue items and outstanding fines, reminders to return or renew items, library circulars, newly subscribed e-journals, changes in library timings, information about important events, and loan requests. Such notifications can be generated automatically through an integrated library management system, and SMS messages can be sent simultaneously to groups of users through various free applications and intermediary websites or clients.

Formal Education, Distance Learning, and E-Learning:- Students are highly versatile in using mobile phones and mobile applications. Academic libraries can leverage this familiarity to deliver library services via mobile devices in support of distance learning, formal education, and research activities in e-learning environments by making information resources ubiquitous. Library services should also align with the teaching and research practices of the colleges, universities, scientific communities, and other patrons they serve.

Database Browsing:- Libraries provide access to a variety of resources and databases. Users can enter search terms and view results designed specifically for mobile viewing. This service includes the OPAC (Online Public Access Catalogue), integrated search, and original document search. OCLC's WorldCat Mobile application, for example, allows users to search for and locate books and other materials available in their local libraries through a web application accessible from a PDA or smartphone.

My Library:- "My Library" is a personalized library space in which users can access information and resources of their choosing. Users can view alerts, check records, renew resources, request items, track interlibrary loans and document delivery requests, set up email notifications for new books and journal articles, and configure preferences for catalogue searching.

E-Resources with Mobile Interfaces:- Some publishers already deliver e-books (both text and audio) accessible via mobile phones, offering access to a range of databases and digital resources including e-books, e-journals, web databases, dissertations, audio books, streaming music, films, images, and article databases that can be used on mobile devices. A large collection of free and subscription-based audio books is available for download and transfer to mobile devices. Libraries can also use multimedia messaging service (MMS) to share photos, videos, and audio. Most e-book publishers provide continuous access to library subscriptions from any internet terminal on campus, as well as on mobile devices such as iPads, Android devices, and Kindles.

Library Guide:- Libraries can provide users with essential guide information—such as library-use guides, question-answering services, and library statistics—delivered in formats that work best for mobile users. Users with questions can quickly contact librarians via mobile devices and receive the information they need.

Mobile Document Supply:- The mobile environment presents new opportunities for submitting document requests and scanned images, monitoring the use of collections, and automating administrative operations, including electronic funds transfer, supply chain management, e-marketing, online transaction processing, electronic data interchange, and automated inventory management.

Text Reference Service:- When libraries receive a high volume of enquiries requiring brief responses—such as dictionary definitions, facts, or service information—librarians can provide instant answers and links to relevant articles or references in real time.

Library Virtual/Audio Tours:- Virtual and audio library tours, along with instruction, induction, and orientation programs, have proven valuable in attracting non-users to libraries and in reaching users located in different geographical areas. Users who lack the time or inclination to attend an on-site workshop can access library tours via their mobile devices. Audio and virtual tours can be produced quickly and inexpensively, potentially reducing the staff time spent orienting new users and explaining available facilities. Such tours can be made available both as downloads from the library website and directly on mobile devices.

QR Codes on Mobiles:- A QR (“quick response”) code is a two-dimensional barcode capable of storing alphanumeric text—commonly URLs—a practice known as “mobile tagging.” Data can be translated into a QR code using any QR code generator, many of which are freely available, users enter the data to be encoded, and the generator produces a code that can be displayed electronically or printed. The encoded information can be decoded using any mobile camera phone equipped with a QR reader, an application freely available for most devices.

Mobile Devices Used in Libraries:-

- PDAs (Personal Digital Assistants)
- Smart phones
- Cell phones
- iPods and MP3 players
- Tablets

The design of mobile devices and services has important implications for accessibility. As reading becomes more inclusive of diverse communities, libraries will need to address ongoing accessibility challenges within the mobile environment.

7. Components:-

- Users
- Devices
- Operating systems
- Services
- Content
- Research tracking (i.e., how users currently engage with information on the World Wide Web via mobile devices)

Prerequisites for Implementing Mobile-Based Library Services:- Mobile technology alone is unlikely to meet the necessary service requirements and must be integrated with broader digital technology. The following prerequisites were identified:

- A digitized information base
- Information products designed for an e-platform
- Electronic information service delivery
- Design of electronic access systems

Mobile-Based Site Development Tools:- While libraries can develop their own mobile sites, various services can also translate an existing website into a mobile-friendly interface using Cascading Style Sheets (CSS) or Auto-Detect and Reformat (ADR) software, which allows a website to rearrange its layout and navigation to suit the screen size on which it is viewed. This ensures that websites display well across all screen sizes, including netbooks, positioning libraries to meet future demand. Library websites (with or without OPACs) specifically designed for mobile viewing include those of American

University Library, Boston University Medical Center Mobile Library, Cambridge University Library, Cornell University Library, London School of Economics (LSE) Library.

Advantages of Implementing Mobile Technology in Libraries:-

User-Friendly Aid:- Familiarity with their own devices helps users access information quickly, without requiring orientation or training. Mobile users typically employ features such as SMS, instant messaging, web browsing, and email effortlessly, most of which are pre-installed on mobile devices or available through data plan packages.

Personalized Service:- Personalized service enables users to interact with library staff to seek specific information or reference assistance remotely.

Ability to Access Information:- Information access from anywhere and at any time greatly benefits users who cannot visit the library in person, providing a constant link to required information resources.

Time Saving:- Users need not record information manually while browsing or searching library resources, nor wait at the library counter to renew or reserve materials, thereby saving time.

User Participation:- Libraries can enrich the OPAC by allowing users to contribute user-generated content, such as notes or uploaded images.

Location Awareness:- Mobile communication enables libraries to offer location-based services and content through Global Positioning System (GPS) capabilities, guiding users to the location of specific documents or services through maps and navigational tools.

Extended Access:- All online resources accessible via desktop also become accessible through mobile devices.

Access for Print-Disabled Users:- Mobile communication helps provide services orally to visually impaired and physically disabled users.

Drawbacks of Mobile Technology:-

- Relatively slow transmission speed compared with wired Internet service
- Limited computational power
- Inconvenient input and output interfaces
- Insufficient content
- High cost
- Vulnerability to viruses

Barriers:- Although mobile Technology holds great promise for library services, there are some limitations or barriers in providing library services such as

- Content ownership and licensing,
- Usually expensive and resource intensive
- Limited memory of mobile devices
- Digital rights management,
- Access to information in the digital age.
- Reach of an external vendor into the digital collections.

- Another pressing concern about mobile technology in the library is privacy expanding services and posing new challenges to reader' privacy.
- Issues related to trust and security Libraries should be wary of entrusting user information to locations in the cloud that may offer a different level.
- Some of digital content can only be accessed on certain devices, and this can have a "chilling effect" on learning and library service because it locks some people out.
- Lack of appropriate mobile-friendly academic content to meet learners' needs.
- Problems in finding and accessing the content needed for mobile learners from the Library perspective
- The dearth of technological expertise among staff members and
- Increasing staff reductions and other cutbacks

Although mobile phones are still viewed by most people primarily as devices for calls and text messages—and are not always associated with information-seeking—users are increasingly dependent on their phones, using them as diaries, for note-taking, and for email and internet access. As a result, library users' expectations for mobile-friendly services are likely to grow.

13. Solutions:- Libraries should conduct thorough analyses and make informed decisions, such as:

- Supporting staff education and training
- Exploring partnerships
- Developing new funding models
- Being prepared to adapt traditional information delivery models
- Protecting against unfavourable content agreements with third-party providers
- Ensuring expert knowledge of mobile devices is disseminated throughout the profession, rather than concentrated among recent library school graduates
- Informing users about freely available mobile-ready books, such as those offered through Project Gutenberg
- Creating opportunities to educate staff and build local expertise through training sessions and professional development
- Building a solid foundation of institutional knowledge about mobile services
- Hosting lectures and discussion groups, or incorporating relevant information into websites, blogs, or newsletters

As mobile technology use grows, library staff will need to acquire and apply relevant skills to serve users effectively, and libraries will face challenges in management, funding, and training to meet this need. Expert technical knowledge must be disseminated throughout the profession rather than remaining confined to a limited number of specialists.

“As technology advances, emboldened librarians hold the key.”

Conclusion:- Mobile technology is exerting a growing influence on libraries, particularly as network access becomes more affordable and reliable, and as mobile applications gain broader acceptance in teaching, learning, and research. This trend is likely to continue, and one-way libraries can respond is by ensuring their websites are easily accessible via mobile devices. Libraries should make deliberate choices about the services they wish to offer in this domain and act accordingly, only time will reveal whether a fully mobile-accessible library—encompassing both services and collections—will become the norm.

References:-

1. **Kantha, P. (2013).** Application of mobile technologies to libraries. *DESIDOC Journal of Library & Information Technology*, 33(5), 361–366.
2. **Saxena, A., (2013).** Impact of mobile technology on libraries: A descriptive study. *International Journal of Digital Library Services*, 3(4). Retrieved from www.ijodls.in
3. **Trivedi, M., & Suthar, V. (2011).** A plan of m-library for Smt. Hansa Mehta Library: A study. *International Journal of Information and Communication Technology Research*, 1(3). Retrieved from <http://www.esjournals.org>
4. **Hanson, C. W. (2011).** Libraries and the mobile web. *Library Technology Reports*, 47(2).
5. **Paterson, L., (2011).** Student attitudes toward mobile library services for smartphones. *Library Hi Tech*, 29(3), 412–423. <https://doi.org/10.1108/07378831111174387>
6. **Vollmer, T. (2010).** There's an app for that! Libraries and mobile technology: An introduction to public policy considerations. ALA Office for Information Technology Policy (OITP) Policy Brief No. 3
7. **Barile, L. (2010).** Mobile technologies for libraries: A list of mobile applications and resources for development. *College & Research Libraries News*, 72(4), 222–228.
8. **Booth, C. (2009).** Informing innovation: Tracking student interest in emerging library technologies at Ohio University. ACRL Report. Retrieved from <http://www.ala.org/ala/mgrps/divs/acrl/publications/digital/ii-booth.pdf>
9. **Mills, K. (2009).** M-Libraries: Information on the move. Arcadia Report Programme, University of Cambridge. Retrieved from <http://arcadiaproject.lib.cam.ac.uk/docs/M-Librariesreport.pdf>
10. **Jacobs, M. L. (2009).** Libraries and the mobile revolution: Remediation = relevance. *Reference Services Review*, 37(3), 286–290.
11. **Mohamed Ally (2008).** M-libraries: Libraries on the move to provide virtual access. *Proceedings of the First International m-Libraries Conference*, London.
12. **Kroski, E. (2008).** On the move with the mobile web: Libraries and mobile technologies. *Library Technology Reports*, 44(5).
13. **Lippincott, J. (2008).** Mobile technologies, mobile users: Implications for academic libraries. *Association of Research Libraries, Bimonthly Report* No. 261.
14. **Hahn, J. (2008).** Mobile learning for the twenty-first century librarian. *Reference Services Review*, 36(3), 272–288.
15. **Karim, N. S. A., Darus, (2006).** Mobile phone applications in academic library services—a students' feedback survey. *Campus-Wide Information Systems*, 23(1), 35–51.