International Journal of Arts and Social Science
ISSN: 2581-7922,
Volume 9 Issue 4, April 2026

Adoption of Mobile Technologies in Academic Libraries: An Overview

Mr. Kiran Kumar Nandi,[1]*, Dr.Vasantkumar M[2]*,
Dr. Shivakumaraswamy K.N,[3]*,

[1.] *Research Scholar, Department of Computer Application and Information Sciences & Library and Information Science.*
[2.] *Research Guides Chief Librarian & Faculty, LIS, Adichunchanagiri University*
[3.] *Deputy Librarian, Adichunchanagiri University,*

Abstract: Digital transformation is compelling academic libraries to remodel traditional service delivery. As mobile devices become ubiquitous, they offer a vital bridge for libraries to strengthen user engagement and provide personalized, on-demand services and facilities. The report provides an in- depth examination of the prerequisites, benefits, and potential obstacles of mobile integration, along with strategic approaches for effective implementation. Additionally, it details the critical infrastructure required for libraries to maintain a mobile-first library service environment.

Keywords: *Mobile Technology; SMS notification services; Mobile document supply; e-resources.*

I. Introduction

Introduction. We are currently in the digital age, where Information and Communication Technology (ICT) is advancing rapidly across every aspect of human life. Libraries have evolved from primarily physical repositories to offering digitally accessible resources, changing how information is stored, accessed, and shared. Mobile technologies have further transformed access by enabling real-time access to resources. Devices like smartphones and PDAs have made it easy to engage with digital content anytime and anywhere. Today's smartphones combine multimedia, browsing, streaming, and e-reading capabilities, reducing reliance on traditional computers. Libraries now offer their services in virtual and mobile settings. With the widespread use of smartphones, it is crucial for libraries to leverage mobile technology to improve service delivery. Librarians need to stay up to date on new technologies, anticipate trends, and incorporate mobile solutions to deliver efficient, user-focused, and innovative experiences.

II. Literature Review

Research consistently indicates the increasing use of mobile devices in libraries and education. Mobile catalogues, online databases, SMS alerts, and QR codes enable timely, efficient access to information and extend services beyond spatial and temporal constraints (Margam & Dar, 2017).

Studies report that the proliferation of smartphones creates opportunities for academic libraries, though services in many developing contexts remain nascent due to limited infrastructure and awareness (Bhoj,2020). Successful implementation depends on robust infrastructure, user readiness, staff training, and institutional support; most students possess smartphones and are willing to use them for academic content.

Evidence shows that mobile websites, WhatsApp, QR codes, RSS feeds, and mobile OPAC enhance services and

user satisfaction, with notable growth in publications on mobile library services after 2015 (Singh & Madhusudhan, 2023). Mobile platforms also support real-time services, remote study, and communication (Revathi, 2023).

Analyses of central university libraries in Northeast India document the adoption of SMS notifications, QR readers, mobile catalogues, and social services to meet user needs (Das & Lahkar, 2024). Purpose-built mobile applications improve catalogue search, reservations, and notifications, enhancing access and satisfaction (Fawwaz, 2024).

Surveys in higher education contexts indicate demand for mobile access but reveal gaps in awareness, training, and resources that impede utilisation (Rahman & Yesmin, 2025). Overall, literature from 2015 to 2026 underscores the centrality of mobile services to modern LISc, with barriers centred on digital literacy/education, infrastructure, and awareness.

III. Mobile Technology

Mobile Technology Mobile technology includes portable, wireless devices designed for communication and information sharing. Technologies like Code Division Multiple Access (CDMA) facilitate simultaneous data transmission by multiple users with minimal interference, optimising spectrum utilisation.

In practical terms, mobile technology encompasses devices that enable tasks to be performed anytime and anywhere, which is crucial during disruptions, emergencies, or remote learning.

Devices supported include e-book readers (such as Kindle), handheld multimedia guides, gaming consoles (for educational games), personal audio players for podcasting (like iPods), Personal

Digital Assistants (PDAs), tablets (such as iPads), Ultra-Mobile PCs (UMPCs), standard mobile phones, camera phones, and smartphones with advanced functionalities.

These devices facilitate reading, listening, viewing, communication, and access to digital resources, thereby simplifying remote learning and revolutionising how information is accessed and used.

IV. Mobile Technology vs. Libraries

Mobile technology has transformed libraries into "libraries in hand," offering resources and services on compact screens with succinct, searchable content. Libraries are modifying their websites and processes to support handheld devices such as PDAs, smartphones, and UMPCs, optimising for swift, accurate results. Personalised features such as search history and location services enhance the precision and user-friendliness of services. Modern devices can run sophisticated applications, connect to cloud services, and support Bluetooth, accelerometers, multi-touch, messaging, mobile apps, mobile web, GPS, Wi-Fi, and media creation, collectively forming the foundation of continuous, real-time library interaction.

V. Key Features of Mobile-Based Library Services include:

1. Mobile OPAC for searching, reserving, and renewing
2. Access to e-resources like journals, e-books, and repositories
3. Announcement and alert services
4. Virtual reference or chat support
5. Interactive tutorials and learning tools

6. QR-based navigation for finding materials
7. User account management on mobile.

These features enhance user satisfaction and streamline operations.

VI. Types of Mobile Technology:

A mobile device is a small, handheld computing device such as a smartphone, tablet, e-book reader, or PDA, equipped with a touchscreen and a miniature keyboard, designed for portability and a variety of tasks.

6.1 Personal Digital Assistants (PDAs)

Handheld devices function as personal information managers for contacts, schedules, notes, and quick reference.

6.2 Smartphones

Pocket-sized devices combining a computing OS and phone capabilities for browsing, multimedia, communication, and apps.

6.3 Cell Phones

Portable devices using cellular networks for voice and messaging across geographic areas.

6.4 Tablets

Touch-screen computers integrating display and components, with sensors (camera, microphone, accelerometer) and stylus/touch input.

VII. Advantages of Mobile Technology. After outlining the different device types, it is useful to assess the advantages of utilising mobile technology in libraries.

1. Customised services: personalised content and task management.
2. Time-saving: access electronic resources from anywhere, adhering to the principle of "Save the time of the reader."
3. No location constraints: access is not limited by geography.
4. Engaged participation: features like chat, forums, blogs, and social interactions.
5. Rapid feedback: immediate questions and answers.
6. Unlimited access: mobile web includes both mobile-optimised and full-web content.
7. Location awareness: GPS-enabled services provide context-relevant information.

VIII. Disadvantages of Mobile Technology. Despite these advantages, deploying mobile Technology in academic libraries is not without its challenges.

a. Potential negative effects if used irresponsibly.

b. Technology is neutral; misuse can lead to harm.

c. Overreliance may stifle creativity.

d. Decreased physical visits to libraries.

e. Health issues: concerns about eye strain, hearing problems, and mental well-being.

IX. Services through Mobile Technology in Academic Libraries

Academic libraries are increasingly offering services via mobile platforms to ensure convenient, timely, and efficient access from anywhere.

1. Access to E-Resources: full-text e-journals, e-magazines, e-newspapers, and links to print collections.
2. MOPAC Services: check availability and explore collections and holdings.
3. Browsing Services: flexible access to databases and electronic resources.
4. SMS, MMS, and Flash Messages: notifications about new arrivals, dues, renewals, and updates.
5. QR Code Services: mobile tagging for quick access to digital content.
6. Learning Services: support for e-learning and distance education.
7. Reference Services: live chat or messaging for quick queries and feedback.
8. Orientation Programs: mobile alerts and updates on services and facilities.
9. Link Services: request-based links for precise and timely access.
10. Mobile Library Instruction: tutorials and training via audio/video for learning at any time.

X. Conclusion

Mobile technology is increasingly shaping library services, especially as network access becomes more affordable and reliable. With the growing use of mobile applications in education and research, this trend is likely to persist. Libraries can effectively adapt by ensuring their websites and digital resources are accessible on mobile devices. Strategic decisions about mobile services will be crucial, and, over time, fully mobile-accessible libraries may become the norm. Mobile technology is now essential for modern information exchange and has significantly transformed library operations. By adapting collections and services for mobile compatibility, libraries can broaden their reach, improve accessibility, and enhance user engagement. This shift signifies the evolution of libraries from traditional institutions.

References:

[1.] *Bilawar, Prakash Bhairu.* (2015). **Use of Mobiles by Library and Information Science Professionals: A Survey,** *DESIDOC Journal of Library & Information Technology*, Vol. No 35 (issue no 6),422-426.

[2.] *Hiremath, B. K. and Kenchakkanavar, Anand Y*. (2015) **Mobile Technology Based Information Services in the Digital World,** *International Journal of Development Research,* Vol No. 5 (Issue No. 9), 5474-5477.

[3.] *Khare, Nidhi*. (2009). **Libraries on the Move: Library Mobile Applications.** *CALIBER***,** 272-278.

[4.] *Kush, Ashwani. andChauhan, R. K. (2003).* **Wireless Media: A New Paradigm, DESIDOC Bulletin of Information Technology***, Vol. No. 23 (issue no 3), 3-9.*

[5.] **New Media Consortium and EDUCAUSE Learning Initiative** (2010b), 2010 Horizon Report, available at:http://www.nmc.org/pdf/2010-Horizon-Report-Preview.pdf

[6.] *Parksah, Ved and Kaur, Kanwaljit. (2015).* ***Enhancement of Library Services Via Mobile Technology****.e-Library Science Research Journal, Vol. No 3 (issue no.3), 1-6. Available at http://www.lsrj.in/UploadedArticles/407.pdf*

[7.] *Saxena, Archana. andYadav, R.D.* **(2013). Impact of Mobile Technology on Libraries: A Descriptive Study**,*International Journal of Digital Library Services,* Vol No. 3 (Issue No. 4), 1-13.

[8.] *Surulinathi, M., Neelakandan, B., and Amsaveni, N*. (2013). **Mobile Technology and Library Services in Bharathidasan University Library,** ***National Conference on Next Generation Digital Libraries and Web Technologies: Challenges and Opportunities*****, 108-114. Available at** http://14.139.186.108/jspui/bitstream/123456789/6183/1/scan0003.pdf

[9.] *Barile, Lori. (2010).* **Mobile technologies for libraries**: a list of mobile applications and resources for development, College & Research Libraries News, 72(4), 222-228.

[10.] *Booth, C.*(2009). **Information innovation: Tracking student interest in emerging library technologies at Ohio University**. ACRL Repo http://www.ala.org/ala/mgrps/ divs/acrl/publications/ digital/ii booth.pdf.

[11.] *Hahn, Jim*. (2008). **Mobile learning for the twenty-first-century librarian, Reference Services Review**, 36(3), 272-288.

[12.] *Hanson, Cody W*. **(2011). Libraries and the Mobile Web, Special Issue of Library Technology Reports**, 47(2, February/March).