

# IMPACT OF MOBILE TECHNOLOGY ON LIBRARIES: A DESCRIPTIVE STUDY

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*Digital Technology has provided faster access to information and it is also challenging the libraries to rethink and remodel their services by adopting the technological changes. Today mobile phones are becoming an integral part of everyday life and are changing the way one connects and interacts with the world. In this changing scenario, Mobile Technology will be of great help to libraries towards strengthening their relationship and providing enhanced user oriented services to existing users. Libraries may well reach out to the remote users who were considered unlikely to connect because of absence of a medium. The paper discusses on the need, advantages, drawbacks, barriers and solutions for propitious implementation of the mobile technology in libraries. It also explores the type of infrastructure required by the libraries for providing these services in libraries.*

**KEYWORDS** - Mobile Technology, SMS notification services, Mobile document supply, e-resources

## 1 INTRODUCTION

Mobile technology has made communication and information access very convenient and timely to users from the comfort of their own homes and offices, and from wherever they are while on the move with their cellular phone units or PDAs (personal digital assistants). The worldwide

mobile telephone subscriptions are at 3.3 billion-equivalent to half the global population. These statistics are substantial evidence that people everywhere interact with information.

As today's cellular phones have more features and capabilities than ever before, including mp3 players, picture messaging, streaming video, and. become more data-capable, fewer people need a computer to collect information. People use a cell phone as their primary interface for surfing the Web, listening to music, watching television, reading books, and interacting with friends. So over the past ten years, the mobile phone has become one of the major interfaces people use to access and share information.

Libraries are social institutions, connecting people with people and people with information. They are increasingly no longer just physical places. As most library users owning a mobile phone, and increasing numbers of these being smart phones, it is time for libraries to take advantage of mobile technology. Mobile Technology will help both novice and experienced librarians to stay relevant in an increasingly mobile society. They need to be aware of technological changes, peer forward, and prepare for the future of library mobile interaction. Librarians must be commensurate with this trend and integrate themselves into the mobile realm if they wish to deliver enhanced user services.

Mobile devices and services offer tremendous flexibility for those who want to take advantage of library services. With a simple 3G connection, a user lying on a beach can access e-books and multimedia content from a local library. Smartphones can access networks and content can be continually streamed over a network, providing content on demand and making it unnecessary to maintain a paper copy of the material. Google is developing for mobile first and the desktop second. Apple is in the midst of making its desktop computers behave more like its mobile devices. Aside from offering convenience, mobile technologies present new opportunities for libraries to promote access and expand reach.

## **2. LIBRARY SERVICES THAT CAN BE PROVIDED TO PATRONS VIA MOBILE TECHNOLOGY ARE :**

### **2.1 SMS notification services**

Libraries may provide the alerts on latest news, events and notices via SMS and MMS to users wherever they might be go. The users can get notified instantly with notice alerts such as- alerts on bringing new books to the notice of users for suggestion, intimation of arrival of indented documents by users, informing availability of reserved documents for collection, appraising about overdue books, outstanding fines, reminders to return library items, renew books, library circulars, e-journals subscribed, change in timings, information about important events, loan request etc.

Such alert notifications can be generated automatically using integrated library management system/software. SMS messages can be sent to group of users simultaneously through many free applications, and intermediary websites/clients.

### **2.2 Formal Education, Distance Learning and E-learning**

Students are very versatile in using their mobile phones and various mobile applications. Academic libraries can harness the advantage to lead implementation of library services through mobile devices to support distance learning, formal education, and research activities in e-learning environment by making the information resources ubiquitous. Library services should also blend with teaching and research practice of colleges/universities, scientific community or other patrons whom they serve.

### **2.3 Database Browsing**

Libraries provide access to a variety of its resources and databases. The users can just enter search terms and see results that are designed specifically for mobile viewing. This service

includes OPAC (online public access catalogue), integrated search, and original document search. OCLC's WorldCat Mobile application pilot allows users to search for and find books and other materials available in their local libraries through a web application they can access from a PDA or a smart phone.

## **2.4 My library**

My library is a personal library space where users can find information and resources of their choosing. Users can read alerts, check records, renew resources, request items, track interlibrary loans and document delivery requests, set up email notices of new books and journal articles, set up preferences for catalogue searching, etc.

## **2.5 E-resources with Mobile Interfaces**

Some publishers are already delivering e-books (both text and audio) that are accessible via mobile phones. It offers access to a variety of databases and digital resources such as e-Books, e-Journals, Web databases, dissertations, audio books, streaming music, films, images and article databases which can be used on mobile. These collections can either be downloaded from the library websites on user's own mobile devices or libraries lend mobile devices with the collections already on them. A large collection of audio books both free-and subscription based services are available for download and also transferable to mobile devices.

Libraries can make use of multimedia messaging service (MMS) on mobile devices to share photos, videos, and audio. Most of the e-book publishers provide 24x7 access to the library subscriptions from any internet terminal within the campus, as well on mobile devices, such as iPads, Android devices, and Kindle.

## **2.6 Library guide**

Libraries can give users the best of library guide information such as library use guide, question answering service, and library statistics delivering rich content in a way that works best for users.

If users have questions and want to contact the librarian for help, they can get a fast response from the library via the mobile device and find the appropriate information needed.

### **2.7 Mobile document supply**

The mobile environment and technology present new opportunities for sending document requests and scanned images and monitoring the use of collections as well as the automation of administrative operations. It can support electronic funds transfer, supply chain management, e-marketing, online marketing, online transaction processing, electronic data interchange, and automated inventory management systems.

### **2.8 Text reference service**

If the library receives a high volume of enquiries that require brief responses, such as dictionary definitions, facts or service information then Librarians can provide instant answers, and links to articles/references in real time.

### **2.9 Library Virtual/ Audio Tours**

Library Virtual/ Audio tours, instruction/induction/orientation programs have been quite significant in bringing the nonusers to libraries and also help the remotely located or users located in different geographical locations. Library users, who don't have time or inclination to attend an on-site workshop, can get access to library tours on their mobile devices. Audio/ virtual library tours can be produced fairly quickly, inexpensively, and could reduce the amount of staff time spent helping new users to orient themselves in the library and explaining the facilities available. It can easily be provided both as downloads from the library website and on mobile devices.

### **2.10 QR Codes on Mobiles**

QR code stands for ‘quick response’, and basically two-dimensional bar codes that can contain any alphanumeric text and often used to store urls, text, etc., known as ‘mobile tagging’.

Data can be translated into a QR code by any QR generator, many of which are available as free download. Users simply enter the data to be translated, and the generator produces the code, which can then be displayed electronically or in printed format. Decoding the information can be done with any mobile camera phone that has a QR reader, which is freely available online for most devices.

### **3. MOBILE DEVICES USED IN LIBRARIES :**

- PDAs (Personal Digital Assistant)
- Smart Phones
- Cell Phones
- iPods and MP3 players
- Tablets

The design of mobile devices and services is important to accessibility. As reading becomes more inclusive of diverse communities, libraries will need to address the ongoing accessibility challenges of the mobile world.

### **4 COMPONENTS**

- the users,
- the devices,
- the operating systems,
- the services,
- the content,

- the research tracking (how users currently engage with information on the World Wide Web via their mobile devices.)

## **5 PREREQUISITES FOR IMPLEMENTING MOBILE-BASED LIBRARY SERVICES**

Mobile technology is unlikely to be able to supply the necessary service on its own, but needs to be integrated with digital technology. The following prerequisites were identified:

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

## **6. MOBILE SITE DEVELOPMENT TOOLS**

While libraries can make their own mobile sites, there are also different services that translate the website into a mobile friendly interface .via the use of CSS (Cascading Style Sheets) or ADR (Auto-Detect and Reformat Software) which allows a website to rearrange its control and navigation to suit the size of the screen it is being viewed on. That way websites will look good on all sizes of screens including the popular netbooks and libraries will be well positioned to meet future demand.

The Library websites (with or without OPACS) which are especially designed for viewing on mobile devices are as-

American University Library, Boston University Medical Center Mobile Library, Cambridge University Library, Cornell University Library, Duke University, Florida International University Libraries, London School of Economics (LSE) Library

## **7 ADVANTAGES OF IMPLEMENTATION OF MOBILE TECHNOLOGY IN LIBRARIES**

### **7.1 User-friendly Aid**

Familiarity with their own devices and technology helps the users in accessing information quickly and does not require orientation and training. Mobile users are using the facilities on mobile phones like SMS, instant messaging, web browsing, e-mail effortlessly to communicate. Most of these features are pre-installed on mobile devices or option for data plan packages.

### **7.2 Personalised Service**

Personalised service helps users to interact with library staff to seek specific information or reference away from library.

### **7.3 Ability to Access Information**

Information access from anywhere at anytime will be of great help for users who cannot visit library in person and provides a constant link to required information resources.

### **7.4 Time Saving**

Users need not record information about resources while browsing and searching library resources or wait at library transaction counter to renew/reserve books and hence the time of the user is saved.

### **7.5 User Participation**

Libraries can enrich OPAC by allowing users to incorporate user created content like notes or images uploaded by users.

### **7.6 Location Awareness**

Mobile communication enables libraries to offer location-based services/content through global positioning system (GPS) capabilities. Libraries can guide the users to the location of specific document or service through maps and navigational tools.

### **7.7 Limitless Access**

All online resources accessible on their desktop also become accessible through mobiles.

### **7.8 Access to Print-disabled Users**

Mobiles communications help providing services orally to vision-disabled and physically-handicapped users.

## **8 DRAWBACKS OF MOBILE TECHNOLOGY**

- compared to wired Internet service, has relatively slow transmission speed
- limited computational power
- inconvenient input and output interface
- insufficient contents
- high price

## **9 LIMITATIONS / 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 and technologies – sustained access will be an extremely important issue for libraries if they adopt mobile Library technology and services that offer content from providers outside of the library.
- Another pressing concern about mobile technology in the library is privacy - because of the risk that patron usage information can be used and exploited by law enforcement official and those who commit identity theft. Mobile technology is changing the relationship between libraries and their users--by expanding services and posing new challenges to reader's 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 of protection from that provided by in-house library infrastructure
- 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.
- difficulty in supplying content to an increasingly mobile student body
- problems in finding and accessing the content needed for mobile learners from the Library perspective
- The use of wireless devices is increasing rapidly, yet there is concern in the scientific community that this technology could have adverse side effects.
- Lack of staff awareness and familiarity- Setting up text alerts, for instance, requires technical expertise from staff who understand how the library management system produces notifications, as well as staff or consultants who can help to set up an interface with a sim card modem or a suitable service in order to deliver those notifications as text alerts
- the dearth of technological expertise among staff members and
- increasing staff reductions and other cutbacks

Mobile phones are still viewed by the majority of people as devices for making phone calls and text messages, so they often don't associate them with other activities, such as information seeking. However, people are increasingly dependant on their mobile phones and there is a growing minority who do use them as diaries, for taking notes and for e-mail and internet access. As a result there may be an increase in expectation from Library users that libraries will provide some services in a mobile friendly way.

## 10 SOLUTIONS

Libraries should conduct analyses and make smart decisions, such as –

- support staff education,
- explore partnerships
- new funding models,

- ready to compromise when it comes to their traditional information delivery models.
- protect themselves from deceptive content agreements with third party providers.
- need the expert knowledge of mobile devices to flow through the profession and not just lie in the hands of recent library school graduates
- tell users about the thousands of free mobile-ready books available from such initiatives as Project Gutenberg
- create opportunities to educate staff, build local expertise, and promote discussion by offering training sessions and professional development options
- build a solid foundation of knowledge about mobile services within the organization.
- host lectures or discussion groups or include such information in their websites, blogs, or newsletters.

As the use of mobile technology grows, library staff will need to learn and use the technology to serve library users where they are, and libraries will face management, funding, and training challenges in meeting this need. Instead, expert technical knowledge must flow throughout the profession.

*“as technology advances emboldened librarians hold the key.”*

## CONCLUSION

There is a growing influence of mobile technology in Libraries, especially as network access becomes more affordable and reliable, and mobile applications have seen mainstream acceptance in teaching, learning, and research. This trend will likely continue, and one way libraries can respond to this emerging trend is to make the library's website easily accessible via web-enabled mobile devices. Libraries should make conscious choices about what they want to offer in this arena and act accordingly, and only time will tell if a completely mobile-accessible library, in terms of its services and collections, will become common place.

"By going mobile, a library takes a giant step toward becoming a round-the-clock service"

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