

# Mobile Based Services and Technology Use for Access and Retrieval of Information in Academic Libraries

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## Abstract

The paper explored the mobile based services and technology use due to their ability to provide an easier and faster way to get information 24x7. Most Libraries and Users are using mobile based technology due to high speed wireless data networks. Libraries provide the services and facilities to its users in the easiest way to disseminate information. The mobile devices provide available opportunities to libraries and users for access and retrieval of information. The aim of the paper is to determine the mobile based services and mobile based technology most needed library users for access and retrieval of information. But due to lack of knowledge, unawareness, lack of funds, lack of staff, lack of skill some libraries are unable to provide very successfully.

**Keywords:** Mobile Library Services, Mobile Library Technology, Information Retrieval, Digital Libraries, Digital collections, e-journals, e-books.

## Introduction

Mobile based information services and technology has become the lifestyle of modern society. Information Communication Technology has changed users' lifestyle for access and retrieval of information in society. The concept of Mobile Libraries are using information seekers due to self service, time saving, limitless access of information, 24x7, connectivity are a variety of advantages. The positive attitude towards the mobile technology, users are ready to accept mobile based services and technology to access information through mobile technology. The education institutions also use the mobile based information services and technology, when the physical access to library doors close, when mobile libraries continue to access and retrieve information. The mobile based services and technology provides the easiest and fastest way to access the information and communicate, sharing the knowledge and reducing the gap between users and information.

The libraries help to develop better mobile based information services in expanding the reach of library services. Mobile based technology offers speed and ease of quick reference utilizing information and extensive research. Adopting mobile based technology assists in sharing information and communicating and performing better services in an easy way with library users anytime and anywhere. Mobile devices used for library services can still be accessed through social media network, Short message service, notification, online database, my library through smart phone, mobile personal space, mobile based e-resources, online reference services etc. Mobile application has various such as maps of the world, factbook, medlinePlus, library of congress, encyclopedia Britannica, wordweb dictionary, worldcat mobile etc. are successful mobile based applications. To use the mobile based library personal or institutional training are required.



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**Mobile Based Technology**

The mobile based services and technology used for information accessing, retrieving, sharing and disseminations. Portable electronic devices refer to mobile technology to access the information (Nalluri and Gaddam, 2016). Portable electronic devices include cell phones, tablets, iPods, PDAs, MP3 players and smartphone access to information on the World Wide Web. Mobile based technology features are music player, Global positioning system, 3G, Social media, message, video, games, audio, text, cameras, mobile office, mobile web , memory card, desktop, mail, Bluetooth and images (Vollmer, 2010; Saxena & Yadav 2013; Negi,2014). As per an online survey conducted by (McGrath, 2016) that 87% of the respondents say internet users have smart mobile phones. The mobile users are increasing and dependence on computers has decreased. Libraries are required to integrate with the mobile realm (2013, Saxena and Yadav). Today mobile services and technology provide a suitable platform for information access and information dissemination.

**Objectives of the Study**

The aim and objectives of the paper was to explore the mobile based services and technology used for access and retrieval of information in academic libraries.

1. Library services used through mobile based technology
2. Users access information via use of mobile based services & technology
3. Mobile based library services fulfill their requirements
4. Advantages and Disadvantages of mobile based services & technology
5. To know the future of mobile based technology

**Use of Mobile Based Library Services for Access & Retrieval Information**

The Library adopts mobile based new services & technologies offering mobile reference services, mobile chat, e-resources, OPAC, e-news, e-reports and social media. Review of literature following library services via mobile based library services and technologies

**Short Message Services (SMS)**

SMS and multimedia message service use mobile telephony systems to exchange the text messages and multimedia contents like audio, video, sound and images. The library uses this services through mobile based technology like new arrivals study materials, issue & return details, interlibrary loan, renewals, fine, item on hold and patrons alert. (Wang, Ke, & Lu, 2012; Negi, 2014; Kumar, 2014; Kumar and Chitra, 2008). Users may use the web for SMS and web applications as Google SMS (Prabhakaran & Kalyani, 2014).

**Mobile Collection**

Users can access the library collection using their mobile phone (Liu & Briggs, 2015). Mobile services and technology are very useful for distance learning (Nalluri & Gaddam, 2016). (Library information providers are able to send images, documents, audio, video and e-resources (Prabhakaran & Kalyani, 2014).

**Mobile Based OPAC and Database**

Publishers database accessible through mobile technology and mobile OPAC catalogues mobile based services such as PubMed (PubMed, 2017). University of Liverpool Library, New York Public Library is the best example of mobile OPAC (Nalluri & Gaddam, 2016).

**Online Mobile Reference Service**

Mobile based services have made it possible for librarians to attend the queries of library users at a time (Lippincott, 2010). All over the world libraries use social media for dissemination of information in groups of people, Example whatsapp, Chat, Skype and Live video. Social networks allow reference librarians to create patrons and improve services (Barnhart & Pierce, 2011).

<b>Webcam Casts</b>	Webcam is a very interesting mobile based service that influences their decision to visit the library, Libraries install webcams to allow users (Negi, 2014).
<b>Library based mobile web sites</b>	Libraries using websites for marketing purpose and delivery of resources and services, information display on website upcoming events. Libraries are transforming websites into mobile based user friendly (Negi, 4014; Nalluri & Gaddam, 2016).
<b>Quick Response Code</b>	QR code two dimensional barcodes contain information about an item, saving time, indexed or programme URLs. QR code is known as mobile tagging (Verma & Verma, 2014). Users can easily scan images and barcode information (Saxena & Yadav 2013).
<b>Mobile VOD</b>	Users can play video games through the Wi-Fi network on their mobile phone (Wang, Ke, & Lu, 2012). Video can be searched using mobile phones (Prabhakarna & Kalyani, 2014).
<b>Mobile My Library/ Personal space</b>	Self service platform where users can manage their own account. Users can set up profile, photo, information, catalogue, issue & return, interlibrary loan, received alerts, renewal and document delivery services (Saxena & Yadav, 2013; Verma & Verma, 2014).
<b>Free E-Resources Database</b>	Library access to various databases and download e-resources databases free of cost.
<b>Requirement for mobile based library services</b>	Mobile based services & technology provides the easiest way, fastest and flexible way to communicate and share information, anytime, anywhere and with anyone for access and retrieval of information in academic libraries. Today's information seekers are mobile based library services driven. Useful information dissemination is required to use mobile technology and connectivity to library users 24X7. Libraries must ensure basic mobile services are in place.
<b>Automation</b>	Library automation techniques reducing manpower, Library automation software are used for library automation modules acquisition, classification, cataloguing, circulation (Verma & Verma, 2014; Anas, Iqbal & Ahmad, 2014).
<b>Digital Library</b>	Libraries are using scanners to digitize records, documents and images. Digital information is based on mobile based library services (Saxena & Yadav, 2013).Libraries having digital collections in all formats, text, audio video, images & sound. Subscription of e-resources includes e-books, e-journals,
<b>Mobile Devices</b>	Mobile devices are very costly and imperative. Mobile technology is not affordable. Every library considers loan programs. For example e-resources, laptops, video cameras, headphones, smartphones, scanners (Nalluri & Gaddam, 2016). Nanyang Technological University allows users to use mobile loan service (Yee, 2012).
<b>Trained Staff</b>	Trained library staff should be operating library mobile sites (Verma & Verma, 2014). Mobile technology is used to disseminate information. When library staff incompetent, lack of skills, knowledge, to use mobile technology they will not provide quality information.

- Access to Internet** Mobile technologies are used to operate social media websites requiring internet connection via 5G to 2G or Wi-Fi networks. Internet connectivity is a basic requirement for mobile library services.
- Security Mechanisms** User privacy and confidentiality is required to lose their information, viruses, hacking online platforms. An effective security system should be established in Libraries. Installation of antivirus, CCTV cameras, security protection and security guards.
- Mobile Library Apps and Uses**
1. World cat mobile : <http://www.worldcat.org/m>.
  2. Library of Congress : <http://itunes.apple.com/us/app/library-of-congress-virtual/id380309745>.
  3. Meebo mobile : <http://itunes.apple.com/us/app/library-of-congress-virtual/id380309745>.
  4. Encyclopedia Britannica mobile : <http://i.eb.com/>.
  5. World web dictionary : <http://www.wordwebsoftware.com/WordWebiPhone.html>.
  6. Medline Plus mobile : <http://m.med-lineplus.gov>.
  7. USA factbook free : <http://itunes.apple.com/us/app/usa-factbook-free/id305888083>
  8. OECD factbook 2010 : <http://www.oecd.org/publications/factbook>
  9. History: maps of the world: <http://itunes.apple.com/us/app/history-maps-of-world/id303282377>
  10. Dropbox : <https://www.dropbox.com/anywhere>
- Mobile Based Services & Technology Advantages**
- Mobile based services & technology is easier to handle than computers (Verma & Verma, 2014). Number of advanced features are available in mobile technology inbuilt applications that the way people communicate and retrieve information (Vollmer, 2010; Nalluri & Gaddam, 2016; Verma & Verma, 2014; Saxena & Yadav, 2013). The following advantages are given below:
1. Improve working process
  2. Enhanced marketing effectiveness
  3. Competitive advantage
  4. Increased collaboration
  5. Preservation of Original copies
  6. Improved user participation
  7. Improve the access of e-resources and services
  8. Improve the quality of library resources
  9. Reduce the communication gap
  10. Improve the quality and efficiency
- Mobile Based Services & Technology Disadvantages**
- Due to the use of mobile technology, information dissemination has been made easy and faster in modern society. There are some disadvantages are given below:-
1. Implementation and maintain costs
  2. Privacy and security
  3. Low transmission speed
  4. Expertise
  5. Digital rights management
  6. Lack of human resources
  7. Lack of support from Govt. & Institutions
  8. Problem in handling new devices
  9. Maintained & updating of contents
- The Future Service of Mobile Technology**
- The Library improves services and adopts new technologies and increases e-resources. The library provides better services to users and improves accessibility, due to use of mobile based services & technologies.

<b>Mobile OPAC</b>	Library provides the online catalogue, advance search technologies off campus.
<b>Text Messages:</b>	The Library sends a message to users, circulation, news, events and training programmes.
<b>E-Resources</b>	Library providing e-resources through their mobile phone anywhere 24x7.
<b>Mobile InterLibrary Loan</b>	the library provide the facility to Inter Library Loan
<b>Mobile Library Support</b>	The libraries provide support in research activities, process and formal education.
<b>Conclusion</b>	The Library adopted new technology and satisfied users' needs in time. Library uses mobile services & technology and provides better services to its users 24x7. But due to lack of knowledge, funds, skills, experiences, staff libraries are unable to provide better services to its users. Therefore, some training programs are required to develop the skill of staff and users. Thereafter library users will be able to use library electronic resources successfully. The mobile based services & technologies are used for easy sharing of information and knowledge access and retrieval of information. Mobile based information services and technologies are more accepted in developed countries for information delivery. The study identified various types of mobile apps and services available. Users can utilize their mobile technology; there is a need for publicity and sufficient information for usefulness of mobile based services and technologies for access and retrieval of information in academic libraries.

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