EXCELLENCE IN LIBRARY SERVICES BY USING MOBILE TECHNOLOGY

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ABSTRACT

Mobile phones and other handheld devices such as i-pads, smart phones, e-readers, tablets etc., are among such devices that are basically used for communication and performing multipurpose tasks such as voice communication, sending smses, taking snapshots/videos, storing phone numbers, playing music, voice recording etc., many are not even aware that these devices can also be used for seeking information from libraries.
Public library has seen tremendous changes and evaluated from paper to electronic media. Proliferation of information in electronic media found great impact on libraries. Mobile Technology is one of the aspects of Electronic Media. The main objective of this paper is to focus on how mobile technology is being used in libraries as well as services provided through technology. In this quest, an attempt has been made here to bring out the meaning of mobile libraries, types of library services provided through mobile technology and glimpse of trends, developments & various projects undertaken by different leading libraries across the globe, especially in the developed countries and also the role of vendors in this regard. India's position in this scenario is also seen. Also this paper is an attempt to understand how mobile technology is useful in improving and providing better library services.

Keywords: *Library services, Mobile library services, Mobile library website, Responsive web design, Mobile technology.*

INTRODUCTION

For centuries librarians are identified with the buildings in which they work. Today as technology advances, this idea is changing at a great speed. Digital information is ubiquitous. It is not necessary for people to come into libraries to use it. They can obtain and use information at home, in the office, in restaurants or wherever they are.

With the help of ICT, Libraries are providing effective and fast library services without any barriers to their users. Previously communication in the library was done through notices & circulars, and to get update about library activities the users had to come to the library personally but in ICT environment the library activities can be informed to their users through a single SMS on user's mobile phones [14]. As we are all aware that most of the user community is highly dependent on mobile technology, so instead of waiting for the readers to come in the library, librarians or libraries should reach to them with the help of mobile technology.

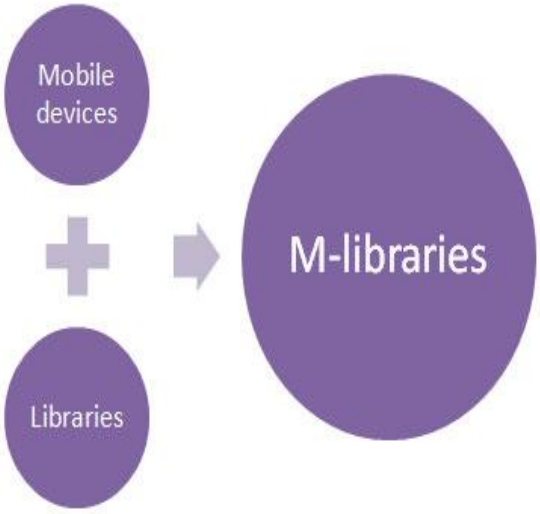
As mobile technology is used by all other sectors of society to conduct business and to access information, libraries will be forced to deliver information on mobile technology – '***a library in every pocket'*** – so that people on the move can learn and access information anywhere and at any time. This will have an impact on how libraries operate in the future [11].

Libraries were compelled to introduce such changes to keep pace with the changing world and to meet the patrons demand for literature in a proper medium, which best suits them. This also provided timely access to proper

and appropriate information by patrons, which keeps them updated with the latest developments in their respective fields. Perhaps the entry of mobile technologies has made the service oriented organization to come much closer to users' by providing services in split of a second.

WHAT ARE M-LIBRARIES?

"When people talk about mobile libraries, they tend to mean a bus or truck that has been kitted out as a roving branch library." [3] "Mobile Libraries" in short are called as M-Libraries. This term itself is a bit confusing to that of "Libraries on wheels" services. But in actual sense, it is a type of library service which by harnessing the power of technology, delivers information and learning materials onto the users' mobile or any hand held devices such as laptops, PDAs, palm top computers, smart phones, notebooks etc., which almost ubiquitously available, anytime, anywhere by anyone and which expands the reach [9].



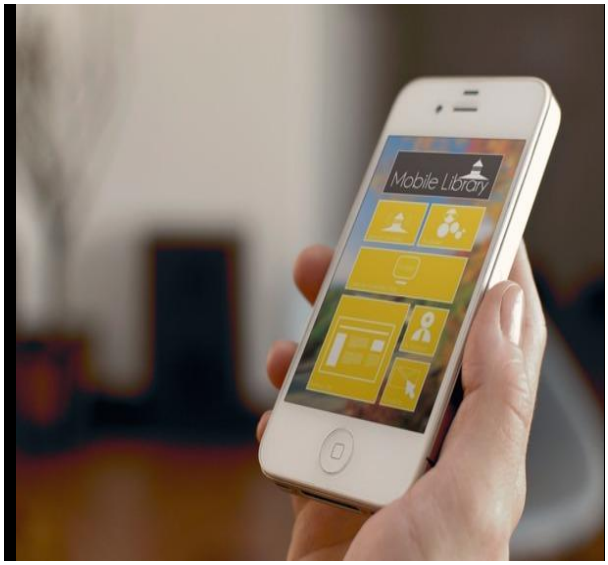


Fig. 1 Mobile Libraries

HOW IT IS OPERATED?

A very first step towards providing such services is the creation of a device support, device independent, common platform, so as to enable to work using broad range of devices, which is done at server end. According to Massachusetts Institute of Technology (MIT) mobile web development team "so rather than customizing web services for the tens of thousands of cell phone user streams, the development team designed the neutral mobile service platform."[5]. It is important to see that all browsers will support mobile library services. The display should fit into the small screen of the mobile devices, which provides hassle free communication with all mobile/hand held devices. For example: **WURFL (Wireless Universal Resource File)** is one such software. It is an open source XML. It enables mobile web to quickly identify the type of device that the user is calling from and responds accordingly. It also supports different browsers used in mobile devices [1].

MOBILE ACTIVITIES

- E-mail
- Transfer file from one place to another via portable USB device
- Send and receive messages

- Download and read e-books
- Download and listen to podcasts / audio books
- Transfer photos or other data via cell/ smart phone
- Send and receive messages
- Download and view video clips
- Play interactive games via internet
- Mobile banking
- Mobile trade[15]

MOBILE TECHNOLOGY IN LIBRARIES

Libraries should be exploring mobile devices as a way to connect with users. Creating a library mobile website that allows users to access library hours, search databases etc, is easier than most people think [7].

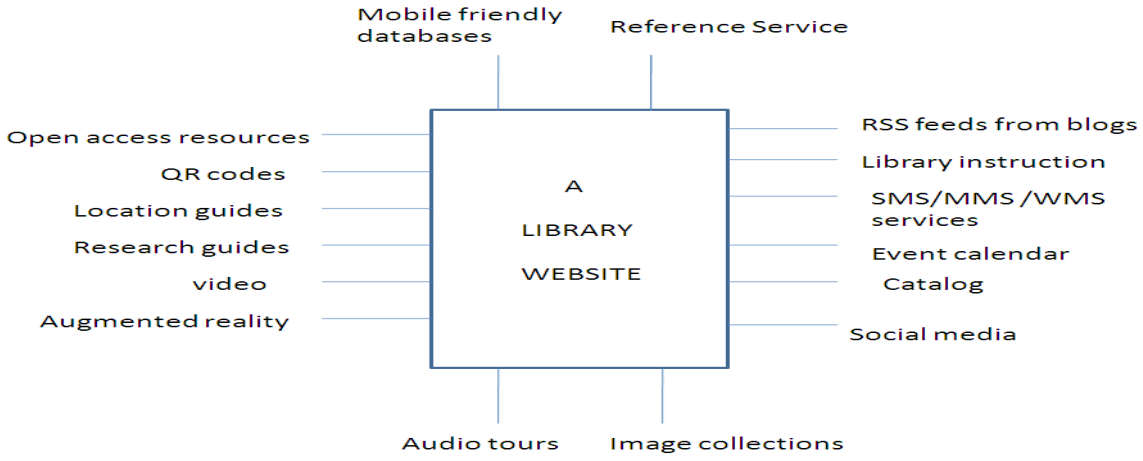


Fig. 2 An examples of a Modern Mobile Library Website

- ***Library content on mobile devices*** (books, articles) (E-books, e-articles, digital materials)
- ***Library services from mobile devices*** –enquiry support, finding resources, circulation, collecting statistics, booking study carrel (enquiries, statistics, college management, circulation)
- ***Mobile specific context/services*** (location services, QR (Quick Response) codes, augmented reality) [3]

RESPONSIVE WEB DESIGN FOR LIBRARY WEBSITE

The goal of responsive web design is to make a web page look equally good regardless of the screen size of the device. Before the introduction of the responsive web design, web designers and developers created most websites by following the principles of pixel-perfect web design. **Pixel-perfect web design** treats a web page like a page from a magazine [6].

As the number of mobile devices that have a variety of screen sizes grows, pixel-perfect web design has become problematic. Responsive web design is an attempt to solve this problem with the following three tools:

- a flexible grid based layout
- flexible images
- media queries

Flexible queries are created by using percentage (a relative unit) instead of pixel (an absolute unit). ***Media queries*** make it possible to apply different cascading style sheets (CSS) depending upon the media type and the maximum width of the device screen. With CSS, one can control images and other fixed-width elements so that they stay contained in their container blocks.

Responsive web design makes a web page adjust itself in response to the screen size of a device. This means that there is no longer one fixed layout in which the elements of a web page are permanently placed. Instead, as the size of the screen changes, the layout of a web page adjusts itself and rearranges the elements of the page.

While responsive web design has some great advantages, it does not by itself guarantee a satisfactory mobile experience for library website. The responsive website is likely to take much more time to load than a simplified separate mobile website. Slow performance is a common problem in responsive websites, which use the same code for all devices, including the desktop PC and the smart phone [10].

TIPS FOR CREATING A MOBILE WEB SITE FOR THE LIBRARY

Proper planning and appropriate project management are necessary for building a mobile website for the library in addition to the technical work. It has to be kept simple and informative.

1. Planning begins with an environmental scan.
2. Capabilities and limits are known to set up a realistic project goal.
3. The mobile website is for users. So the information added should be what a user would want to know on the mobile website.
4. Library services and resources should be featured.
5. Less is more – the entire library website should not be replicated.
6. Scope of the website project should be explicit.
7. Roles for content providers, usability experts and web designers/developers should be defined in advance for a better design and improved usability.

8. Before launching, do let users do a test-drive and get their feedback.
9. Publicize – use both traditional and social media to market the mobile website.
10. Stay flexible and be ready to make quick changes.
11. An open Source CMS, Drupal, Wordpress etc. has a number of responsive themes. There are also boilerplates that can help us to develop a responsive site quickly, such as **Bootstrap**, a front –end tool-kit for rapidly developing web applications, and JQuery Mobile, a touch-optimized HTML5 UI framework. Responsinator is a very useful tool for testing how your site appears in different mobile devices [12].

LIBRARY SERVICES WITH THE HELP OF MOBILE TECHNOLOGY

Many academic and special/research libraries implementing these changing technologies are deriving various types of services for their patrons, which also increases the potential of such ICT devices. The provision of various types of services through this device depends on the target i.e., the specific users', but in general the most common services provided are [2]:

a. **Mobile Library Website:** This service enables users to access library services through World Wide Web. Materials which can be accessed are MP3, video clips, e-books, journal articles etc. along with general information.

b. **Text Messaging Services:** Number of libraries is using text messaging facilities like SMSes for renewals, reservations, recall notices and information about the arrival of new books etc.

c. **Mobile Catalogue Search**: Some of the universities in western countries are providing the services of OPAC through mobile, wherein one can query for the availability of documents they need from the library.

d. **Reference Services:** One of the traditional services given by reference librarian. Now users can be referred through mobile technology.

e. **Mobile Catalogue (M-OPAC):** Mobile online public access catalogue: Users will get the information about library holdings at anywhere and at any time.

f. **Social Networking:** Library services and updates through Facebook, twitter, RSS feeds, Blogging, etc.

g. **E-Mail:** Current Awareness Service (CAS) can be provided more effectively.

h. **Mobile Friendly website or mobile applications:** Researchers are interested to get the information about important websites on their area of interest. List of websites can be send easily by using mobile technology.

i. **Mobile e-Books:** Users can access e-books through various mobile devices such as iphone, ipad, Smartphone, etc. Amazon provides Kindle e-book reader.

j. **SMS Service:** This service is more useful for circulation department. Libraries are using SMS for [13]-

- If requested book is available(collect messages).
- Reminder if a book is due.
- Requesting a list of loans via SMS.
- Renewing books via SMS.
- Requesting an overview of outstanding fines via SMS.
- Checking the availability of books via SMS.
- Requesting the opening hours of the library via SMS.
- "Ask a librarian" service.
- Let the users to search the catalogue

- SMS alert
- Database accesses
- Recommend e-Readers – e- Books audio books.

PUBLISHERS OFFERING MOBILE COLLECTIONS

- BBC Audio books
- EBL eBook Library
- Google Books
- Overdrive
- Safari Books Online
- Amazon Kindle for the iPhone

MOBILE LIBRARY DEVELOPMENTS AROUND THE WORLD – A GLIMPSE

- **Open University, UK:** A project by name "***Information Use on the Move***" was undertaken by Keren Mills of Open University, UK, which was funded by Cambridge University, to identify the trends in using mobile phones by patrons seeking information.

- **Athabasca University Library:** This university library provided a "***Digital Reading Room***" where it has implemented a mobile library website, which includes digital reading files, application software and tools, providing journal articles and e-books for members over mobile phones.

- **North Carolina State University:** It has undertaken a project by name "***Mobile Library Project***". This university has created a mobile library website which looks similar to a mobile application. Some of the services which the library provides are browsing catalogue, library hours, campus directory, and instant messaging chat system with librarians and PC availability. They also provide unconventional services such as group finder and live webcam feeds.

- **Amsterdam University Library:** The interim mobile library website created by Amsterdam University library provides a number of services including access to the OPAC, a simple search interface, a link to the library's social networking page on twitter, information on library opening hours, location, contact details and PC availability throughout the library.

- **Huddersfield University and University of Bath:** Apart from using mobile devices for providing various services to users, these two university libraries have utilized a technology where mobile devices can read QR (***Quick Response***) codes provided that they are equipped with QR reader software (some software's are freely available) and WIFI access facility.

- **Cambridge University:** Cambridge University is one of the universities which has developed a mobile friendly site for their digital library. The mobile site created by this university focuses on allowing users to search the catalogue with thumbnail images of book covers and access their account to view profiles.

- **Online Computer Library Center, Inc. (OCLC):** It is also conducting a research in collaboration with Boopsie Inc., relating to the mobile applications and interfaces for services that it offers. Boopsie is providing the software for the mobile devices in this research. The main purpose of this research is to gather data to inform and shape future mobile access to world cat.org [4].

IMPACT ON LIBRARIES

Peoples are more positive to receive the information via SMS and it is more popular among library users. Many users prefer Smartphone for internet browsing, watch videos and view photos [8].

- Information can deliver very quickly, so it saves time of users.
- It attracts the users to library.

- It is beneficiary in Teaching – Learning activity so it improves cooperation between library staff and users.
- More actively deliver messages to people wherever they are at the right time.

PROBLEMS IN USING MOBILE TECHNOLOGY

- It is expensive and resource intensive
- It requires skilled and expertise library staff
- ***Screen Quality*** – mobile phones having small screens and display, so it is difficult to read.
- Internet connectivity and mobile signals are major obstacles.
- It requires good infrastructure and maintenance.

CONCLUSION

In this paper we have discussed the recent developments in the mobile technology/web and how library websites/services have been responding to these developments. Responsive web design is one of the most recent trends that can help libraries meet their patrons' high expectations in the mobile first culture of information consumption.

As a middleman between library patrons and the third party content providers such as publishers and database aggregators, libraries need to promote and advocate more mobile-friendly interfaces for many separate library systems, including the library catalogue, the link resolver, course reserves system, licensed databases, and downloadable e-books and AV products. Mobile technology is fast becoming the preferred method for connecting to the Internet.

The impact of mobile technology in library is increasing in developed countries but the application of Mobile services is less in India. We have accepted the change but not applied up to that level, our service is limited to SMS service only. Mobile Technology is feasible as an ICT option in providing library services. Librarians should positively come forward to implement mobile technology in the libraries and should try to provide quality based services to their users according to their needs. Implementation of this technology requires good infrastructure, maintenance, budget, skilled and expertise library staff.

Library and information professionals can create mobile library websites and implement in various library services as selecting and creating eBooks, selecting and developing apps for library users, and circulating library materials through mobile devices.

From computers to the internet, libraries have successfully met the challenges of adapting their services to changing technologies. They need to reconfigure their role to stay relevant in this drastically different information landscape.

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