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MOBILE TECHNOLOGIES USED IN LIBRARY AND INFORMATION SERVICES : APPLICATIONS AND IMPLEMENTATION

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ABSTRACT

Library always is an example of auto-update institute for their new services through the development of Information and Communication Technology. The new technology will be of great help for the better and quick services for the users. In this Digital Era, traditional library services are now changing to Mobile Library services. Learning through web is shifted from D-Learning (Distance Learning) to E-Learning and now E-Learning to M-Learning (Mobile Learning) will be a big wave in modern education. The purpose of this paper is to use of mobile technologies in accessing information and use the library resources for better learning. This paper tries to identify the different services of library can offered through Mobile technology. The Paper highlights library services via mobile, Mobile Applications for Learning, Mobile Browser, Skills Required for Library Professionals, Advantages of Library Service via Mobile, Future of Mobile Service, etc.

KEYWORDS: *Mobile Technology, Mobile Applications, Mobile Library, Library Services, Learning, E-Resources.*

INTRODUCTION :

Ranganathan's Fifth Law said Library is a growing organism, Technology also growing organism like Library. Information and communication technology is rapidly changed for the education system also. In libraries perspective Information and communication technology has provided very faster access to information and the technological changes, it also challenging the libraries and library professionals to rethink and modernize in their services.

Libraries are Social Institutions, while connecting with people and people connecting with information. In this digital era, any users no longer just a physical place for their information or queries, so they are connects their smart phones with the internet or webs for access their required information easily. For this purpose, library are not limited their services. In last few decades, libraries have adopted through ICT in the development stages like, house-keeping operations, faster access to collection, digitisation to provide multiple access at users desktop. In this era, Mobile devices and services offer

excellence flexibility for those users who want to take information with easily in library services. With internet connection, a user can access e-books and multi content, multi concept of any information from a library with their mobile phone.

In the age of information explosion, Mobile technologies have made information access and communication very easily and timely to users from anywhere with a Mobile Phone. Mobile technology has changed the concept of library with "Libraries in Hand" trend. Now a day, many College and University Libraries have digital collection and access through computer. But as good alternative, Mobile phones can also be accessing Digital Information. Mobile devices or phones are personal devices and can be search information at anytime anywhere.

2. OBJECTIVES:

Mobile technology is now more relevant as never before. Most students are very grateful for this innovation. The main objectives of mobile technology use in the library services are given below:
• To provide information relating to new come up documents, due date of library documents, Purchase suggestion from users, etc to the user through mobile SMS alert service.
• Connection at a convenient time and in any place that expands the possibilities of collaboration.
• Optimization of the user of mobile tools available to students
• Compact storage of the material, which is always in hand
• Compliance with the modern social order and interests of 'mobile' students.

3. MOBILE TECHNOLOGY:

The Word "Mobile" came from Latin word 'mobilis', which means "to Move". Mobile Device is a handheld communication, portable, easy use, device connected to a wireless network that allows user to make voice calls, send text message, and run different applications. According to Wikipedia, Mobile Technology is the technology used in cellular communication. Mobile Code Division Multiple Access (CDMA) technology has evolved quickly over the past few years. A standard mobile device has gone from being no more than a simple two-way pager to being a mobile phones, GPS navigation device, an entrenched web browser and instant messaging client, and a handheld game console. Many experts argue that the future of computer technology rests in mobile computing with wireless networking.

4. MOBILE PHONES AND LIBRARY SERVICES:

In the development of Information and communication technology, the libraries have transformed their services and housekeeping operations for providing access to its collection. Libraries are very much interested in channels for information dissemination, Like Mobile phones, telephone lines, cellular networks and Internet. Many college and Universities are digitised their collection for the teachers, researchers, students to find what they want without going to the library. Now, in education environment Mobile phones and e-mail are most valuable tools to facilitate punctual handling and response of the user need from inside and outside of the library community.

Library professionals must be organized to take this change and challenge and put this effort to raise the market and demand for mobile access to personalised facts and information anytime, anywhere on one's own handheld device. Librarians will need to become skilled in using devices to facilitate users to access library resources anytime anywhere. Academic libraries need to keep abreast of the dynamically changing needs of their patrons. Mobile library service is specialised and personalised information services that it can be achieved using the web or internet. For respect of service new book arrivals, book availability, due date, libraries notification, library news all are send through mobile users in the services.

5. LIBRARY & INFORMATION SERVICES VIA MOBILE:

In the modern age library can move their services from traditional to digital. It is a dynamic changes, that the library and information service through a mobile and this services are the following:

5.1 SMS Alerting Services: In library services SMS services is the new technique of the modern library services. You send any queries as text or any message through your mobile phone and get easily answers to your queries just a second. Like, Merriam Webster (online) is mobile subscription facility and gets the vast information just by messaging. Library OPAC service is get through your mobile device, by check the availability of documents and details of any book. Also Publishers are sending new book information via SMS. E-mail facility is exist, now new book arrival, user suggestion, overdue, library circular, notice, changing time, important announcement, events, etc. every important matter to the library related are send to the users fast and quick via mobile phone with SMS.

5.2 Formal Education, Distance Learning and E-Learning: Library as an important role in the formal, distance and e-learning environment for making the information resources available. Students are very advanced in their mobile phones and mobile applications. Academic libraries can implementation to their services through mobile phones. Libraries also design their services through the social networking, which are very useful for young generations to their formal, distance learning for interaction, attention, information and communication. A distance education student can receive their course related all notifications through mobile phone.

5.3 Instant Messaging for Reference Services: Mobile phones or devices very useful devices for Short Range Reference Service or current service like, any word meaning, definitions and other short information to the users from digital libraries and web. In Instant Messaging network, library can use web-based instant messaging services from Google, Way2sms etc. Today Reference services in Libraries are increasingly, many researchers are doing their work remotely. In reference service like "Ask-a-Librarian" services can be offered to mobile users, to submit their queries related to the research by text and get answers quick.

5.4 E-resources with Mobile Interfaces: Now Various Libraries provide access their own databases and resources digitally through mobile. Users search terms and see their search results for their mobile devices. E-book (both text and audio) delivering publishers those are accessible through mobile phones. In the project Gutenberg, one can access about 20,000 free e-books using free 'Plucker' e-book viewer. In Amazon 'Mobipocket' is one of the standard e-book reader applications and the website has over 40,000 titles (about 11,000 free). 'LibriVox' is free audio books for Public domain. 'OCLC NetLibrary' collection is providing e-book and audio book titles in library subscription. In Online or web resources of any large library users are log in their user ID and password, get access their resources through mobile devices, when they are off-campus.

5.5 Suggest a Purchase: Librarian can obtain the suggestions from the users sent through mobile devices. In these cases users not visit the libraries and write the requirements in a register.

5.6 Virtual Tour: Users might be provided with virtual tours of the library sections and their services. For example, Library of Congress provides an application prepared for the iPhone users which gives a virtual tour of Library of Congress that mirrors the main reading room, the great hall, the bible collection etc.

5.7 Audio Tour: Libraries can provide Audio Tour of a library services. For example, University of Limerick Library, Ireland provides audio guidelines to the Library users.

5.8 Image Services: The different image, like, new arrival book picture, digitized photograph, diagram, maps, places photo are the library services through mobile for the users.

5.9 Library Catalogue: Libraries can provide their catalogue on their mobile devices. Library services their catalogue through web called WEBOPAC. For example, OCLC 'WorldCat' Mobile application pilot project allows users to search and find a book and others documents available their libraries through web. And they can access from their mobile devices anywhere.

5.10 Research Consultation and Instruction: Mobile Library service is a customer care service. Research scholars may have a communication with the library staff to get the discussion and get suggestions through mobile phones.

5.11 Journal Finder: Library Journal Finder provides access to full text journal, magazines and Newspapers. For example, American University library has providing option to search journals via, mobile phones.

5.12 News and Events: Library news or any events is known to their users through mobile. Job information, Different competition news, library events, like orientation Program, Education Program, book recall, lecturers in specific topic, and many more to up-to-date their users personally.

5.13 WhatsApp Group Community: Whatsapp group community is a modern way to services to the users in a

particular library. In these services library administrator added their users through mobile phones and share information related to library. Such as, library new arrivals, library programme, events, notice, etc.

6. Mobile Browser: Browser helps to the users to investigate information from all the access points, they significantly in terms of their operating systems supported; the greatest can display most websites and offer zoom page and keyboard shortcuts, while others can only display websites optimizes for mobile services. Independent browser software vendors such as opera, open signal and access have all been working on browsers that integrate the latest web standards and start to generate an experience that overcomes some of the intrinsic shortcomings of mobile devices. There are some Mobile browsers are listed below:

Sl. No.	Browser Name	Key Features	Operating System
1	Opera Mobile	Multiple tabs, Zoom-in	Windows Mobile, Symbian
2	Opera Mini 4	Compressed downloads for fast browsing, Zoom-in	Java
3	Skyfire	Display rich websites with flash or widgets like YouTube, customizable zoom features	Windows Mobile, Symbian
4	Safari	Display rich websites like YouTube, Zoom feature, excellence touch based user interface	iphone
5	Mozilla's Minimo	Multiple tabs, Social books marking	Windows mobile
6	Google Android	Display rich websites, Zoom feature, touch screen interface	Google android
7	Bitstream's Thunderhawk	Compressed dowmloads for fast browsing, zoom-in display	Symbian S60, Windows mobile, Java
8	Microsoft IE for Mobile	Standard browser features	Windows Mobile
9	Blazer	Standard browser features	Palm OS
10	S60 Web Browser	Standard browser features	S60

(Table.1: Some list of Mobile Browsers)

7. Mobile Technology applications in Students & Learning:

The Mobile devices will increasingly more become an instrument for creation of digital content, and not just a device for access to content. Students can use smart phones to create short videos, to types a blog entry for a class assignment, and take photo to build a PowerPoint or other graphic materials to their study purpose. Students are tech-savvy. They get more engaged and really thrive when they are using mobile devices in their study purpose. The following benefits are shown below:

7.1 Preparing students for the Future: First and foremost your service as a educator is to prepare your students for the future. Well in order to do so you need to incorporate mobile technology in the class study or class room. Working with mobile devices will not only be a part of their everyday lives but it will also be important aspect in this growth to connected world.

7.2 Up-to-date services: The old days of looking for information in encyclopaedia are long gone. Having mobile devices in the classroom allow students instant access latest news, information, statistics, etc. Virtually every question they have is at their fingertips, keeping them connected with what's going on around them and ensuring they are always well informed with the most up-to-date information.

7.3 Alternative of Print Material: Many textbooks are not the most relevant sources of information. Today's generation has grown accustomed to instant, updated information. Textbook can't provide students with the latest information like a mobile devices can. Also having digital textbooks on their digital devices keeps students more organised and gives them easy access to their study materials.

7.4 Learning goes outside of the classroom: by allowing mobile devices in college and universities you can expand learning outside of the classroom. Students will not only have access to information during computer lab item. They can look up information from anywhere on campus.

8. Skills Required for Library Professionals: Modern Library policies and services should flexible and open that new information requirements of users in pursuit of organisational needs are assemble with new technologies. Library professionals or Librarians should obtain and apply the following skills if they desire to make available mobile based services:

- Knowledge of features like, hardware and software of mobile devices.
- Build mobile optimised content including interactive and contribute library homepages, OPAC, Virtual tours, and databases.
- Skill with internet services like, using e-mail, SMS service and Spam preventing, etc.
- Protecting privacy and security levels as more personalised information is involved in using mobiles for library services for the development of expertise.
- Skill related to searching and navigating throughout mobile devices, mobile web applications like, e-mail.
- Skill for interacting with user via, smart phone applications, mobile friendly web pages, and third party intermediary clients.
- Skill describing to training and user orientation to market these services to mobile users.

9. Advantages of Library Service via Mobile: Library and information service through mobile device is the great way in modern age. Library can offer their services to the people other the social institution. The following advantages are given below:

9.1 User-friendly Aid: skill with their own mobile devices and technology helps and does not involve any training to the mobile users in accessing information easily. Mobile users are using the services on mobile phones like SMS, instant messaging, web browsing to easy to communicate.

9.2 Personalised Service: Mobile devices or phone is a personalised device. It helps to the users to assist with specific required information without library professional away from library.

9.3 Ability to Access Information: In modern age information need to the users at anytime anywhere. So they can access the information through mobile phones.

9.4 Time Saving: Time saving is very important matter in daily life. Users can't wait for library resources to library circulation counter to new or renew books. So they find current service from their mobile devices for seeking information.

9.5 User Participation: User participation is the essential improvement in mobile services. Libraries can develop OPAC by allowing users to include user created content like notes or image and other things uploaded by the users.

9.6 Location Awareness: Mobile communication enables library services to suggest location based services through global positioning system (GPS) capabilities. For this aspect, library professional or staff can point out the users to the locations of specific information or services throughout navigational tools.

9.7 Unlimited Access: Library online resources accessible by the users on their seeking information by the personal computer also unlimited access through mobile phones or devices.

9.8 Access to Print-disabled Users: Mobile communication facilitates providing services verbally to vision-disabled and physically-handicapped users.

10. Implementation of Mobile Based Library Services: Mobile Technology is incredible to be capable to provide the necessary services on its own dimensions, but requirements to be integrated with digital technology. The following prerequisites were identified:

- Digitized information support
- Information products deliberate for e-platform
- E-resources and e-information service delivery
- Design to electronic resources use systems
- Provide virtual and physical environment for using mobile devices
- Security and authentication is a matter in mobile device
- make sure the require of the mobile users of different networks to benefit the services

11. Future of Mobile Service: In last few years' changes of mobile technologies as well as also mobile devices and application in library and information services. Now a day any mobile user can access information via mobile phone throughout the development of ICT. This day is not far away when we will use phone to read barcodes for access to library Resources and OPAC information will develop GIS sensitivity and to communicate with users through mobile.

In recent trends Mobile Web2.0 and 3.0 applications for social networking for the library community are available to facilitate discuss, blogs, wikis, and other features valuable to the library professional developments.

- ✦ Providing liberty for new equipment and occupation styles.
- ✦ Preserving new content types and formats.
- ✦ Licensing information products for mobile devices.
- ✦ Hosting or Pointing to institutional comfortable intended for mobile devices, e.g. podcasts
- ✦ Providing training on the procedure to the devices themselves, not just access to content.

12. Mobile Websites:

Some companies and organizations also develop their Mobile application, mobile versions of their websites that are doing better services for viewing on mobile services. Those are following:

- ✦ Encyclopaedia Britannica Mobile offers a search box and list of search options. A result includes Full text entries with enlargeable images. Access: http://i.eb.com
- ✦ Medline Plus Mobile created by the US National Library of Medicine, Medline Plus Mobile provided information about exact diseases and wellness issues. Also contains drug information, medical dictionary and current health diseases and health news. Access: http://m.medlineplus.gov.
- ✦ Worldcat Mobile searches the catalogue of books, and more. Results include items available in libraries. Access: http://www.worldcat.org/m

13. Mobile Library Websites:

Libraries are optimising their websites for mobile devices for few years. In the modern library and information services through the mobile device following the different libraries;

- ✦ Adelphi University Libraries Mobile (AU2GO). Offers library staff contact information, library related information, and the library blog "Bibliography", and many more. Access: http://m.adelphy.edu/library/
- ✦ Albertsons Library, Boise State University. Simple text direction-finding various ways to find the library and its collections. A remarkable feature is the inclusion of a "Find in our Building" category, while locations of call number such as computer or mobile devices. Access: http://library.boisestate.edu/m
- ✦ North Carolina State University Libraries. Represents categories such as room reservations, group finder, and webcams. Another aspect is the ability to view the number of library computers to access the related information via mobile technology. Access: http://www.lib.ncsu.edu/m/home/?browse=iphone
- ✦ PENN Libraries, University of Pennsylvania. A large amount of information at your fingers clicks, including image search, video clipping, and more. Access: http://www.library.upenn.edu/m/
- ✦ University of California Riverside Libraries. Many valuable categories are including like, research guide, library workshops, and library's social media profile. Access: http://m.library.ucr.edu
- ✦ Virginia Tech University Libraries. It offers vital information, such as library hours, contact, catalogue search, and library maps. Access: http://m.lib.vt.edu/

14. CONCLUSION:

Mobile technology applications in library services are the necessity in modern and time valuable society. Interaction the user community can be achieved due to advancement in mobile technology. Now students can access a wide range of digital collection or resources and library services and precisely engage in learning atmosphere using any mobile devices wherever and whenever they choose. The impact of mobile technology implementation raised strong awareness amongst library professionals for the need to obtain skills to realize the associated profit. Library policies and services should be flexible and open to all that new information needs of

users in pursuit of their needs. The main aims of the library services are not in the in-house services, the services can access the open to all through mobile devices.

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