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REVOLUTION OF MOBILE TECHNOLOGY IN LIBRARIES: AN OVERVIEW

Shabana Tabusum S.Z*[1], A. Saleem[2], Dr. M. Sadik Batcha[3]

[1]Librarian/Research Scholar, Bharathiyar University, Coimbatore, Tamil Nadu, India

[2]S.G. Librarian/Research Scholar, Bharathiyar University, Coimbatore, Tamil Nadu, India.

[3]Prof, Dept. of Library & Information Science, Periyar University, Salem, Tamil Nadu, India.

ABSTRACT

With the boom of Electronic explosion, we can say that our planet earth is small. Yes the Mobile Technology has made a fabulous impact on communication. Each day, the technologies keep growing and accessing more and more people in the networking system. The most remarkable effect is in the field of education and business. This large planet can be brought on our work desk, in our pockets or in our hands. Learning is now affordable not just for the city or the turbans. This technology is so wide spread that people in the remote areas can connect themselves through the mobile phones or the other mobile devices. Library and Information Science in particular can be made accessible even in areas where the librarian's task of building libraries and maintaining it in economically backward areas is a dream. The student in this area can access the Library at a Universities establishment somewhere far. Accessing information from the libraries in the process of learning is made easy and this emerging technology benefits other human activities.

Keywords: Mobile Technology, Web based Mobile Technology, M-learning.

INTRODUCTION

Mobile communication has been existence since the mid-twentieth century. The first official mobile phone was used in Sweden by the Swedish police in 1946. In 1983, Motorola unveiled the first truly portable cellular phone and operated by the early 1990's cellular phones were considered as being second generation (2G) and they were able to work on mobile phone systems. These days, the 3G era, most laptops and personal digital assistants (PDAs) have wireless cards or Bluetooth interfaces built into them for convenient mobile internet access. This has led to increase in the adoption of mobile internet and expansion of the use of portable devices involving computer, media player and cell phone. It can say that mobile device is a compact computing device which can be used in storing, retrieving, and transmitting data/ information/ knowledge to users. Today mobile devices have become and essential part of individual all over the world. Each person use a mobile as his / her primary interface for listening to music, watching movie and T.V., reading books, surfing web and interact with friend and family.

Mobile phones utilize frequencies transmitted by cellular towers to connect the calls between two devices. Mobile phone may also be referred to as wireless or cellular phones. Small bundles of code designed and developed for use on a portable device are known as mobile device applications. They are intended to enhance the features of a portable device by

providing additional functionalists and utilities that increase the device's utilitarian and entertainment features. Forms of mobile devices applications vary, but common examples include games, interfaces, and mobile widgets designed for use on cellular phones, blackberries, Android and PDAs. This segment of mobile technology has ballooned with the wide-spread use of cellular phones. Portable music devices, and other mobile web-capable equipment.

Mostly in developing countries libraries are using web-based technologies like SMS, instant messaging chatting and social networking through mobile devices. So, mobile device can help to integrate libraries into mobile revolution. Generally mobile devices are being used by everyone in day to day life including library and information services. Latest Mobile Devices frequently. Users have iPod touch, i-phone, smart phone, blackberry and android with web application that has changed the whole life of people. Web based mobile devices can also provide library and information services to the users like circulation services, resources reservation, library holdings, bibliographic information, indexing facility, sending text message, and location & internal layout of particular library and information centre. Users can also used mobile devices in payment of fine, photocopy charges, and membership fee etc.

WHAT IS A MOBILE DEVICE?

When we speak of mobile devices, we need to define what that constitutes exactly. The authors of this paper experienced initial difficulty in defining the line between mobile device and laptop but can generally agree. The laptop and net book movements, while certainly more portable than desktop PCs, are at their core lightweight desktops. They can utilize the same software suites, input devices and peripherals. Therefore, for the purpose of this paper, mobile devices have the following qualities:

- ♣ Can be easily utilized without the benefit of the table or surface
- ♣ Can be placed easily in the pocket (i-Pad excluded) (or I supposed people with tiny pockets)
- ♣ Has a mobile operating system such as but not limited to, Android, Windows
- ♣ Mobile, Palm OS, or RIM interface
- ♣ Requires a specialized browser for Internet access
- ♣ Are not dependent on a stationary configuration or external power source (longer battery life)
- ♣ Typically have a display screen with touch input or a miniature keyboard
- ♣ Capable of functional browsing of the Internet (Sorry Kindle)

It should be stated emphatically that the coming years will see the line between what is considered the mobile device and a laptop blur more and more extensively. At this juncture of [9] technology and application this paper focuses on the above qualities. Regardless of how mobile devices are defined, libraries must create strategies to provide for the potential alternative delivery to these devices and the subsequent audience.

EXAMPLES OF DEVICES FITTING THE ABOVE QUALITIES

(a) Smart phones: Blackberry, Treo, Pre, i-Phone, Android, et. Al



(b) PSP (Play station portable gaming device), DSI


(c) PDAs (portable device assistants)


(d) i-Pod Touch(e) i-Pad


Capable of providing a viable and useful browsing experience to mobile users. As the decade moves forward, one can expect these devices to become even more ubiquitous and commonplace as access points for information. Specifically referencing the capabilities and crossover power of the i-Pad, it seems likely that lines between smart phone, media player/e-book reader will continue to blur As evidenced by this wide range of devices, the authors cannot claim authoritative listing, but as the following section will state there is no doubt that mobile connectivity is not a fad. [4]

CONCEPT OF MOBILE DEVICES

Mobile device is a generic term used to refer to a variety of devices that allow people to access data and information from where ever they are. This includes cell phones and portable devices.

A mobile device is also known as cell phone device, handled device, handled computer, palmtop or simply handheld, is a pocket-sized computing device, typically having a display screen with touch input or a miniature keyboard. Apple, Samsung, LG Nokia and Motorola are just a few examples. It has an operating system (OS), and can run various types of application software, known as apps. Most mobile devices can also be equipped with WI-FI, Bluetooth and GPS (Global positioning system) capabilities that can allow connections to the internet and other Bluetooth capable devices such as an automobile or a microphone headset. A camera or media player feature for video or music files can also be typically found on these devices along with a stable battery power source.

Early pocket sized ones were joined in the late 2000s by larger but otherwise similar tablet battery computer. As in a personal digital assistant (PDA), the input and output are often combined into a touch-screen interface. Smart and PDAs are popular amongst those who wish to use some of the powers of a conventional computer in environments where caring one would not be practical. Enterprise digital assistants (EDAs) can further extend the available functionality for the business user by offering integrated date compute devices like barcode, RFID and smart card readers. These include, but are not limited to, portable Digital Assistants (PDAs) notebook computers, Tablet PCs palm pilots Microsoft Pocket PCs, Black Berry, MP3players, text pagers, smart phones, compact discs, DVD discs, memory sticks, USB drives, floppy discs and other similar device [7].

Main Features of Mobile device [3,4]

- ♣ Connectivity with each other
- ♣ Provide Social Networking
- ♣ Provide SMS and instant message
- ♣ Banking transaction
- ♣ Store, retrieve and communicate data
- ♣ Used in Information seeking
- ♣ Entertainment and music
- ♣ Provide images and pictures

- Record audio-video clips
- Provide call history
- Can do recovery of data
- Provide Calendar
- Provide profile setting
- Indicate Battery coverage and roaming location

TYPES OF MOBILE DEVICES

Mobile devices can be classified into the following types: (Mobile Computers)

- Notebook PC
- Ultra-Mobile PC
- Handled PC
- Personal digital assistant/Enterprise digital assistant
- Graphing calculator

Handled game consoles (Media recorders)

- Digital still camera
- Digital Video Camera
- Digital Audio recorders

Media players (Displayers)

- Portable Media Player
- E-book reader

Communication devices

- Mobile phone
- Cordless telephone
- Pager

Personal navigation devices

Other accessories: Portable telephone device that does not require the use of landlines [10].

WEB BASED MOBILE APPLICATIONS

Mobile phones aren't just phones anymore: they can access e-mail search the web, video chat, and play games. Even mobile devices like i-Pad and iPod touch can bring social media, productivity tools, and entertainment literally into the palm of your hand. Therefore, libraries should be exploring mobile devices as a way to connect with patrons. Creating a library application ("app") or mobile web site that allows patrons to access library hours, view their library account or even search databases is easier than most people think. The resources below can help libraries begin to plan and implement their own unique mobile presence. Resources are selected based on relevancy, accuracy, and content. Due to current economic considerations, free mobile applications are selected over similar paid applications. [8]

DISCOVERING AND DOWNLOADING MOBILE APPLICATIONS

(a) AppBrain. Discover Android apps via search, rankings, and categories. Install apps from the Web with the Fast Web Installer app. *Access:* http://www.appbrain.com/.

(b) Appolicious. Browse applications for most mobile devices, including Android and i-Phone. Read app reviews and find lists of the best apps. *Access:* http://www.appolicious.com/.

(c) App Store. Find applications in categories such as games, business, education, productivity, and entertainment. Apps can be downloaded wirelessly to i-Phone, iPod touch, and i-Pad. *Access:* http://itunes.apple.com/us/genre/mobile-softwareapplications/.

(d) App Store HQ. Browse all apps, search by category, read the latest app reviews, and more. The App Store HQ covers Android, i-Phone, i-Pad, and Web apps. *Access:* http://www.appstorehq.com/.

(e) Get jar. Browse applications by category or device type. Compatible with most major platforms such as Android, BlackBerry, Windows Mobile, and i-Phone. *Access:* http://www.getjar.com.

(f) Mimvi. This mobile apps search engine discovers i-Phone, Android, and Blackberry apps. Type a category in the text box and Mimvi will return a list of related apps. Icons represent each app's native device. *Access:* http://www.mimvi.com. [ref:07, 13]

EXAMPLES OF MOBILE LIBRARY WEB SITES

♣ **Adelphi University Libraries Mobile (AU2GO).** Offers library hours, library staff contact information, a link to the library's blog "bibliography," and more. *Access:* http://m.adelphi.edu/library/.

♣ **Albertsons Library, Boise State University.** Simple text navigation offers various ways to find the library and its contents. An interesting feature is the inclusion of a "Find in Our Building" category, which lists call number locations and popular locations such as study rooms and computers, each linked to an animated floor map. *Access:* http://library.boisestate.edu/m.

♣ **North Carolina State University (NCSU) Libraries.** Elegant interface with icons representing categories such as room reservations, group finder, and Webcams. Another interesting feature is the ability to view the number of available library computers. *Access:* http://www.lib.ncsu.edu/m/home/?browse=iphone.

♣ **PENN Libraries, University of Pennsylvania.** A multitude of information at your fingertips, such as mobile versions of databases, image search, library video clips, and more. *Access:* http://www.library.upenn.edu/m/.

♣ **University of California Riverside Libraries.** Glossy icons designate many useful categories, including research guides, library workshops, and links to the library's social media profiles. *Access:* http://m.library.ucr.edu.

♣ **Virginia Tech University Libraries.** A simple but effective layout offers important information, such as library hours, contact information, catalog search, and library maps. *Access:* http://m.lib.vt.edu/.

MOBILE WEB SITES

In addition to or in place of mobile applications, some companies and organizations also develop mobile versions of their Web site that are better optimized for viewing on mobile devices.

♣ **Encyclopedia Britannica Mobile.** Offers a search box and a list of suggested searches. Results include full-text entries with enlargeable images. *Access:* http://i.eb.com/.

♣ **Medline Plus Mobile.** Produced by the U.S. National Library of Medicine, Medline Plus Mobile provides information about specific diseases, conditions, and wellness issues. The site also contains prescription drug information, medical dictionary, and current health news. *Access:* http://m.medlineplus.gov.

♣ **World Cat Mobile.** Search the World Cat catalog for books, movies, music, games, and more. Results include items available at local libraries. *Access:* http://www.worldcat.org/m.

FEATURES OF LIBRAY MOBILE SITES

A review of library mobile sites shows that they may offer the following features:

♣ Mobile library catalog plus loan-related services
♣ Information about opening hours
♣ Directions to the library
♣ Information on how to contact the library via multiple channels (chat/SMS/phone/e-mail)
♣ Link to mobile-enabled databases
♣ Links to mobile-enabled Web 2.0 accounts, such as Twitter, Flicker, YouTube , and Face book
♣ Floor maps
♣ Information on availability of computer and group discussion rooms
♣ A webcam so users can check on congestion in the library
♣ News about library events
♣ Content for download on podcasts, videos.

WEB BASED MOBILE DEVICES IN LIBRARY AND INFORMATION SERVICES:

With the availability of web application in mobile devices, libraries and information centers can satisfy diverse needs of users. Mostly users are having internet enabled mobile devices or Wi-Fi enabled devices like iPod and I touch. The following are some areas where mobile devices can be used to provide library and information services [3].

Online Circulation Services: Users can search their library account or membership account or other related information but on this, user ID and password is essential through which they can search or know different information regarding latest position of account, issue and return status of resources, due date, over dues and many more, On the other hand library and information professionals can send information to users regarding late fine, reserved resources, reminder and others.

OPAC Services: The metadata of resources can be accessed with the help of mobile devices at anytime at anywhere. The information about resources is displayed as author, title, publisher and subject. In developed countries, Two Dimensional Barcodes (QR) are attached with bibliographical record that can be access through such mobile devices that have a camera and barcode software in-built when the picture of particular resources are taken through mobile devices, the details of particular resources are displayed on mobile screen.

Message and Text Services: With the help of mobile device, library and information professionals can send message and text to users easily. The users can also send or receive any query or answer from a library.

Online Sharing of Resources: Library and information professionals can provide e resources to those who have their ID and password issued by the library and information centers on their mobile device.

Bibliographic and Indexing Services: User can access bibliographic record of resources, subject Bibliographies of resources and subject indexes of various published articles on their mobile devices for this ID and password is essential,

CAS and SDI Services: With the help of mobile devices, libraries and information centers can provide Current Awareness Service (CAS) and Selective Dissemination Information (SDI services to users.

e-Mail Services: Library and information professionals maintained users mobile number abed email address, through which, they can send full details about library and information centre services or activities or circulars or notices on user's mobile number and on their email.

News and Events Services: Today every institutions upload current news and events on its institutional website or on library and information centers websites or send recent news and events on user's mobile devices or on their e-mail. [2]

SERVICES REGARDING LOCATION / MAP OF LIBRARY & INFORMATION CENTRE

With the help of Web based mobile devices, users can browse specific or desired resources or Library holdings and identify their own location when they are in library and information centers. Library and information professionals can also communicate about library and information centers holdings or facilities available there.

Some Burning Issus: There is also no doubt that particular difficulties continue to be set the use of mobile devices – coverage problems, network access difficulties, battery life, complexity issues and for many cost and competence in using the wide and powerful range of functionalities that now form part of the latest mobile devices. An increase in uncertainty in how best to benefit from the increase in power and functional and technical potential that mobile devices offer is causing many to query what the future of mobile information access and learning holds. [6]

CONCLUSION

Library and information professional can create mobile library websites and implement in various library services as mobile reference service, circulation service, marketing resources and many others. The purpose of this paper is to address types of Mobile Devices and Web based Mobile Devices. Topics to be addressed include selecting and creating eBooks, building mobile-friendly websites, selecting and developing apps for library users, and circulating library materials through mobile device. From computers to the internet, libraries have successfully met the challenges of adapting their services to changing technologies.

Today's challenge is delivering services to smart phones, eBook readers and tablets to users on the go who now view more content on mobile devices then desktop and laptop computers, CDs and DVDs are becoming passé, e-Book sales outpace paper books, and users increasingly download music, movies and books from iTunes and Kindle, storing their purchases in the Cloud. Mobile devices can play a key role to fulfill the thrust to access the e-resources. The day has to come when users would be able to feel that e-resources in the palm of their hand. Though there are a number of burning issues related to mobile devices, however mobile devices would be very popular in coming years.

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