

# Library and Information Services with a Touch of Mobile Applications

Shiva Kanaujia Sukula\*

## Abstract

The paper discusses the recently introduced mobile applications in the library and information services. Currently the libraries are facing problems of fewer footfalls as well as abundant availability of information. The mobile applications into library services are paving a way for efficient information services as well as opening doors for more number of users. This paper digs deep into the variety of experiments being carried in different libraries all over the world. The conclusion gives a glimpse into the need of such initiatives in Indian libraries at large scale also.

**Keywords:** Mobile Phone Applications; Libraries; Information Centers.

## Introduction

The developing countries especially India is witnessing the rapid enforcement as well as willful welcome of the emerging technologies. The field of mobile technologies has been tremendously affecting lives of each strata of Indian society. When a storm is walking through neighborhood, the libraries are not supposed to act as a mute spectator. Yes, the libraries have had initiated their say, by introducing the mobile applications in the information services. The last two centuries have been busy in incorporating the web 2.0 application through social networking, followed by 'mobile scenario'. The literature reflects the use of computers, internet, computer skills and information searching behaviour on the web as well as the OPAC. The users are accessing the web for communication purposes as well as for locating general and academic information. The similar situation is found in a university setting among students at the postgraduate level from rural and urban backgrounds in a comparative analogue (Shiv Kumar, 2012).

Definitely the digital divide exists yet the difference is continuously declining. The only significant differences found among both groups were for their

reactions during unsuccessful searches. Thus, the background of users at the postgraduate level does not significantly affect the use of computer and internet, information searching behaviour patterns on the web and library systems, especially OPAC. Various studies are examining users through varying information channels for academic purposes in library systems in India. Different aspects of Web 2.0, Library 2.0 and Library 3-D are in vogue. In the neighboring country, the concepts of Library 2.0 and Library 3-D are explored. The study provided a proposal for taking advantage of the new opportunities prevailing in the adoption of Library 2.0 and Library 3-D concepts and explored how a user-centered library can be developed with the help of Library 2.0 and Library 3-D applications. In an era of emerging technologies, the users are widely aware of the use of Library 2.0 Second Life for Library Services. Information professionals are being advised in using Library 2.0 and Library 3-D applications for library services (Farzana Shafique, Ann Riedling, 2013).

### *Academic Libraries and Mobile Phone Technologies*

The literature reflects on current and near future issues and trends concerning academic libraries. The embedded librarianship, participatory and collaborative approaches to library services have emerged. The academic libraries adapting their roles and develop stronger relationships. Embedded roles through collaboration are outreaching to academic community. Libraries are seeking to add mobile technologies in order to enhance their traditional services. The changing scenarios are explaining the need to make them not only more available, but also

**Author's Affiliation:** \*Dy. Librarian, Central Library, Dr. B.R. Ambedkar University, Agra, UP, India.

**Reprint's Request:** Dr. (Ms.) Shiva Kanaujia Sukula, Dy. Librarian, Central Library, Dr. B. R. Ambedkar University, Paliwal Park, Agra, Uttar Pradesh- 282 004, India.

E-mail: [shivajrf@rediffmail.com](mailto:shivajrf@rediffmail.com)

more relevant to their users. Library personnel and teachers are also familiar with Web 2.0 concepts, tools and services, and applications related to services and education. The change in scenario as well as technology is visible among the users. The shift is from wide screens of computer system to handy, pocketed and tiny screens of mobile phones. Mobile phone services are providing applications so that users could search the catalog, access the reserves module, renew books and find information such as library hours. The mobile application services are also evaluated by usability testing, comprising pre- and post-usability test questionnaires and "think out-loud" usability tests. In a study (Ronan Hegarty, Judith Wusteman, 2011), it was found out that changes to the interface can ensure greater usability. Libraries are increasingly turning to the Mobile Web to offer new services to their patrons. Smartphones are likely to become central to the future delivery of information services.

While a study (Sarika Sawant, 2012) reflects that LIS instructors, in some Indian universities, have a low level of familiarity regarding the use of Web 2.0. Most of the instructors use Web 2.0 for video sharing via YouTube. Nearly, half of teachers have never used Wikis. The main problem in use of Web 2.0 in teaching was the lack of training programs organized by universities and other institutions for instruction in the use/teaching of Web 2.0 tools. The later developments in the interactive services happened due to the augmented usage of mobile phone technologies. There are seven mobile initiatives in the libraries (Lilia Murray, 2010):

- i. Library Web sites;
- ii. SMS Reference;
- iii. MOPACs (Mobile OPACs) and Integrated Library Systems;
- iv. Mobile Collections;
- v. eBooks and Mobile Reading;
- vi. Mobile Instruction;
- vii. Mobile Audio/Video Tours.

In this context, a number of well-known blogs have discussed mobile initiatives in libraries. The literature has examined the seven initiatives. As they are moving beyond mere trends and are becoming best practices. The development and implementation of these mobile services range from work-intensive and expensive to scalable, inexpensive solutions (Joanne Dillon, 2013).

#### *Mobile Applications and Digital Library Software*

Last decade has been very influential in use and spread of open source digital library software. The amicable platforms bridge the technological applications such as mobile technology and digital library. Using the open source software for an information resource is a useful application. These types of technological experiments can be beneficial, especially for the developing countries. Another study describes the process of selecting and customizing XTF open source digital library software for a unique application. The Rutgers University Libraries, in collaboration with the University of Liberia, and with grants from the Engineering Information Foundation (EIF), the United States Agency for International Development (USAID), and with contributions from the International Society of Electrical Engineers (IEEE), have created The EAKO System – Engineering Access to Knowledge Offline, a prototype "Library in a Box" for engineering information at the University of Liberia. The product runs on the open source platform XTF, created by California Digital Library, and is based on TEEAL, The Essential Electronic Agricultural Library, developed by Cornell University. XTF is an easily customizable and powerful open source digital library solution, which met the needs of The EAKO System. The use of open source digital library software concerns the automation of data entry, as well as creating mobile access (Laura Bolton Palumbo, 2012).

#### *Mobile Applications and Reference Services*

The text reference environment has created its niche. In this context, the Reference and User Services Association (RUSA) behavioral guidelines are helpful. These guidelines are supportive to the librarians in text reference service. The current text reference literature amplifies the ongoing inclusion of mobile applications in library services in the untouched areas of library world. The journey which began by My Info Quest, the USA's first collaborative text reference service is continued all over the world. The considerations for developing a service are primarily defined as relating to budget, staffing, and usability. Text reference is characterized as somewhere between synchronous and asynchronous, increasing in volume, and mostly concerned with short, straightforward questions and answers. There are two models of text reference service that are popular: mobile device based and computer application based. To develop more enhanced reference service and models, there is demand to understand user experience with text

reference service. Effectively establishing text reference service will need continuous implementation of the highly researched outcomes into practice. The experiences of other libraries and published literature present a detailed set of considerations for libraries. Such explorations might prove useful for launching text reference service (Lili Luo, 2011).

#### *User Behavior and Information Environment*

Many libraries are creating Virtual Learning Environment to develop a one-stop-shop for information resources and help in developing information skills for users. The user behavior and their expectations from the library are sometimes unexpected and rather unspecified and unarticulated. Where the libraries, have been designing the mobile application based information services with the background of user feed-back, need to observe their relevance and optimum usage in constant manner. Sometimes the background, information literacy level and adaptation to newer technology play significant role in absorption of the user's information seeking behavior.

The "non-traditional" students, and unfamiliar with technology and electronic sources of information are almost distance learners (Averil Robertson, 2010). As explained, the libraries develop a resource that would give the students easy access to collections of, such as:

- i. online resources grouped by subject;
- ii. current awareness services;
- iii. practical worksheets and online resources to help students develop their information skills;
- iv. links to key government publications; and so on.

The library-user relationship is crucial in ensuring the use and value libraries by the users. Keeping the changing environment motivating as well as guiding factor, the libraries are designing and planning information services in order to sustain a viable library-user relationship. Librarians need to pay attention constantly to the common sense factors when designing, planning, implementing and reviewing library facilities, resources and services. The abundant choices are available to information users. These choices (Fatt Cheong Choy, 2011) often affect the user decision making based on:

- i. The usefulness and quality of information resources and services.
- ii. The expediency and innovative library resources and services.

- iii. Convenience
- iv. Attention
- v. Awareness
- vi. Perception of value

#### *Use of SMS Application*

Short Message Service (SMS) application is widely used in libraries. The SMS is useful to enhance the use of the resources by marketing the library services. This is an essential service for the benefit of the users as well as to market the library resources. Since the SMS application is very popular among young generation, so the users can be easily motivated. The limitation with the longer SMSs exists. They need to be either split up into several messages or stored in the server as a webpage and sent as a hyperlink in SMSs. This situation arises when the SMS cannot be sent by the SMS server. Creation of a prototype has been suggested to serve as an important milestone in integrating such a service into the future integrated library services (ILS) (John Paul Anbu K., Makana R. Mavuso, 2012). They aimed to look at how SMS technology can be very effectively used in library and information services with a glimpse into a pilot project conducted by University of Swaziland and Emerald Group Publishing Limited and the subsequent need for creating a prototype for the SMS-based library alert services and marketing of library services. Sometimes the SMS application requires more planning for implementation as it cannot be claimed as a single click SMS-based alert service.

#### *Various Tools, Mobile Products and Hybrid Technologies*

Libraries are increasingly turning to the Mobile Web to offer new services to their patrons. Smartphones are likely to become central to the future delivery of information services (Ronan Hegarty, Judith Wusteman, 2011). One of the subject related tools is GeoStoryteller. GeoStoryteller is a tool developed by the researchers that runs on smart phones, such as an iPhone or Android. This tool helps learning about a historical topic on the places where significant events occurred by providing the user multimedia stories about the historical sites (Anthony Cocciolo, Debbie Rabina, 2013). The information is delivered via the mobile web or through Layar (an augmented reality web browser). Such tools require attention in the user interfaces, usability issues etc. Studies are concentrating on exploring the mobile phone services in the following areas (Nor Shahriza Abdul Karim, Siti Hawa Darus, Ramlah Hussin,

2006):

- i. The utilization of mobile phone services in the educational environment.
- ii. The nature of mobile phone use among users.
- iii. The perception of users on mobile phone uses in library and information services.

Time to time, respondents in researches indicated their willingness to become the users of such services if offered. The studies should assist libraries in designing the system that allows for effective access to various information and library services using mobile phones. The emphasis is also on wireless application services. Brian T. Johnstone (2011) provided an overview of the Boopsie product for creation of a mobile device application for deployment on all major mobile devices. This mobile app product has been implemented at Bucks County Community College Library, including interfacing with the integrated library system and preexisting web-based services. As stated, cloud computing becomes mobile when a mobile device tries to access the shared pool of computing resources provided by the cloud, on demand. Libraries are focusing on digital resources residing in the "cloud", the responsibility has become more complex. It is observed that mobile applications may enrich their functionality by delegating heavy tasks to the clouds as the remote processing and storage have become possible by adding asynchronous behavior in the communication. However, developing mobile cloud applications involves working with services and APIs from different cloud vendors, which mostly are not interoperable across clouds. Such services require high scalability and quality of service (QoS). Huber Flores, Satish Narayana Srirama, Carlos Paniagua, (2012) design a middleware framework, Mobile Cloud Middleware (MCM), which handles the interoperability issues and eases the use of process-intensive services from smartphones by extending the concept of mobile host. It is possible to handle hybrid cloud services from mobiles by using MCM.

In multilingual information needs and academic environment, the information portals assisting mobile devices are need of the hour. The research finds that students are assisted by mobile portals created in their native language directing them to important sources of information on campus (Kevin Curran, Winston Huang, 2008). The study informs about the unique implementation of a multilingual Chinese-English Campus information portal for mobile devices which assists fresh arrivals in locating important information about the university. Another quotable example is; the New York Law

School's Mendik Library chose a vendor, and rolled out the service with a multimedia information campaign leading to an award-winning product (Terry Lee Ballard, Anna Blaine, 2013).

## Conclusion

The worldwide applications and experiences reveal the wide spread implementation of mobile phone application in the library and information scenario. The libraries and information centres in India are also endeavoring to join this revolution. The case studies show the efforts of a good number of libraries to initiate such applications. The next level in this direction is the increasing the awareness among the librarians as well as the users; how this tiny yet powerful gadget improve the work experience and service environment.

## References

1. Anthony Cocciolo, Debbie Rabina. Does place affect user engagement and understanding?: Mobile learner perceptions on the streets of New York. *Journal of Documentation*. 2013; 69(1): 98 – 120.
2. Averil Robertson. Using the University's VLE to Provide Information Support for Midwifery Students at the University of Bedfordshire. *New Review of Academic Librarianship*. 2010; 16(1). DOI: 10.1080/13614530903240569.
3. Brian T Johnstone. Boopsie and librarians: connecting mobile learners and the library. *Library Hi Tech News*. 2011; 28(4): 18 – 21.
4. Farzana Shafique, Ann Riedling. Survival avenues for Pakistani libraries in the era of emerging technologies: Adoption of Library 2.0 and Library 3-D. *Electronic Library, The*. 2013; 31(4): 412 – 432.
5. Fatt Cheong Choy. From library stacks to library-in-a-pocket: will users be around? *Library Management*. 2011; 32(1/2): 62 – 72.
6. Huber Flores, Satish Narayana Srirama, Carlos Paniagua. Towards mobile cloud applications: Offloading resource-intensive tasks to hybrid clouds. *International Journal of Pervasive Computing and Communications*. 2012; 8(4): 344 – 367.
7. Joanne Dillon. Building Mobile Library Applications (The Tech Set No. 12). *Library*

- Review*. 2013; 62(4/5): 345 – 346.
8. John Paul Anbu K, Makana R Mavuso. Old wine in new wine skin: marketing library services through SMS-based alert service. *Library Hi Tech*. 2012; 30(2): 310 – 320.
  9. Kevin Curran, Winston Huang. A multilingual mobile university information portal designed to cater for visiting overseas students. *Interactive Technology and Smart Education*. 2008; 5(1): 4 – 28.
  10. Laura Bolton Palumbo. Building a “Library in a Box” with an out of the box solution: creating a prototype engineering library using XTF. *Library Hi Tech News*. 2012; 29(6): 8 – 10.
  11. Lili Luo. Text reference service: delivery, characteristics, and best practices. *Reference Services Review*. 2011; 39(3): 482 – 496.
  12. Lilia Murray. Libraries “like to move it, move it”. *Reference Services Review*. 2010; 38(2): 233 – 249.
  13. Nor Shahriza Abdul Karim, Siti Hawa Darus, Ramlah Hussin. Mobile phone applications in academic library services: a students’ feedback survey. *Campus-Wide Information Systems*. 2006; 23(1): 35 – 51.
  14. Ronan Hegarty, Judith Wusteman. Evaluating EBSCOhost Mobile. *Library Hi Tech*. 2011; 29(2): 320 – 333.
  15. Sarika Sawant. The study of the use of Web 2.0 tools in LIS education in India. *Library Hi Tech News*. 2012; 29(2): 11 – 15.
  16. Shiv Kumar. Use of computer, internet, and library OPACs among rural and urban postgraduates in Indian universities. *OCLC Systems & Services*. 2012; 28(3): 144 – 163.
  17. Terry Lee Ballard, Anna Blaine. A library in the palm of your hand. *New Library World*. 2013; 114(5/6): 251 – 258.
-