

Investigation of Mobile Resource Espousal in University Libraries

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Authors' contributions

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Authors' contributions:

Number of words	3583
Number of Pages	12
Tables	1
Figures	0
Supplementary material	0

ABSTRACT: Mobile Internet applications and service innovations are changing people's way of life across the globe. At the same time, they are also changing the way that people communicate and access information. People who visited libraries to find specific information in the past are now able to find the same information online through mobile phones. However, there has always been a technological gap between developed and developing countries, a scenario that has been attributed to lack of financial muscle and goodwill. With mobile computing as the current trend across different spectrums, this study sort to ascertain the mobile resource espousal in university libraries across the globe with a key concentration on Universities in developed and underdeveloped countries. The Countries were selected based on the International Monetary fund (IMF) report 2016, identifying The United States and the United Kingdom among developed Countries and Zimbabwe, Uganda and Kenya among underdeveloped countries. High research institutions of higher learning were selected based on the QS World University Rankings 2016/17; identifying Cambridge University in the United Kingdom and Harvard and Massachusetts Institute of technology in the United States among developed Countries. University of Zimbabwe, Makerere and the University of Nairobi were identified among developing nations. The survey involved analysis of the University libraries' websites and that of the Universities for any links leading to the mobile library website or other mobile library applications. Where no such link was established, a search was conducted for the term "mobile" in every accessible site search icon on the University's homepage. The findings show that University libraries in developed countries have a wide array of mobile resources accessible anywhere and at anytime demonstrating the contemporary status of mobile resource adoption. On the contrary, mobile resources among University libraries in developing nations are generally lacking and shoddy for the case of University of Zimbabwe's library. The study recommends collaborations and networking among University libraries globally, good will and financial support from mother institutions in developing countries

Keywords: Mobile resources, espousal, developed countries, developing countries, University libraries

Date of Submission: 21-09-2017

Date of acceptance: 06-10-2017

I. INTRODUCTION

The core mandate of Academic libraries is to meet clientele's user needs. Academic libraries are therefore adopting and implementing new technologies with the key drive of ensuring user needs satisfaction. Since their conception, and principally the instigation of the Internet, academic libraries have bespoke to changes in technology and clientele. One such major espousal is the shift from desktop computing to a mobile setting; which has become fundamental to make certain that academic libraries keep up with modern-day society. The key has been to permit access to the library anywhere and at anytime as per clientele's expediency.

There has, however been variations in technological espousal athwart the globe with academic libraries in industrialized countries having fully adopted to dated technology as compared to their counterparts in developing states (Laura Bolton Palumbo 2014). In harmony with (Gillwald et al. 2012), Internet access has not been ordinary in emerging states with merely about 27% being able to use the services. There have been issues such as lack of computers and electricity with very few domiciles connected to the grid. Conversely, smartphone ownership in developing nations has risen tremendously, with over 700 million users across the African continent alone (Sambira, 2013). Lack of web access in developing nations has aided the swift espousal and novel use of smartphones in such areas as health, finance, agriculture and education (digital learning, mobile library services). This paper therefore delves into the present status of mobile library resource espousal in a number of high research institutions of higher learning across the globe.

II. LITERATURE REVIEW

Studies have managed to keep track of the mobile library resource adoption in Academic libraries. For instance, (Johnson et al 2010) survey on the new media consortium mentions the ubiquitous and indispensable nature of mobile devices as having pressed Academic libraries to create mobile websites and applications for their resources. The study adds that Academic libraries cannot however match the efforts in other spectrums more so the commercial world. It quotes the commercial world as having outpaced the libraries in awareness and implementation of the technology. Academic libraries in developed nations happen to have made tremendous strides in adoption of mobile services as compared to those in developing countries. In China for instance, (Yang & Gui 2014) aver that at least 90% of Academic libraries under Project 985, (A Chinese government initiative with the aim of transforming Chinese Universities into world class Universities) offer some form of mobile resources. In Canada, the observations are no different as every academic library has or plans to implement the mobile library concept (Thomas 2010) and (Aldrich 2010). For example, a study by (Robin Canuel & Chad Crichton 2011) on 'Canadian academic libraries and the mobile web' established that as of 2010, 14% of Academic libraries under the Association of Universities and Colleges of Canada (AUCC) had some form of mobile resources. Four months later, four new mobile libraries had emerged, signifying the steadiness in growth. The percentage growth had shifted to over 44%. The remarkable augmentations are suggestive of a glittering future for the mobile library concept. In the United States, the observations are analogous. For instance, (West et al 2006) asserts that Academic libraries in the United States were offering mobile resources as early as 2006. An example is the Ball state University library that has been offering the resources since 2006. (Catharine Bomhold 2014) also established that 70% of Academic libraries in the United States were offering mobile resources in 2014 up from 21.6% in 2010 connoting significant augmentation in a span of just 3 years.

Even as studies affirm of Academic libraries in industrialized nations' growing interest in the mobile library concept, the implementation has not been homogeneous to those in developing Countries. For instance, (Laura Bolton Palumbo 2014) alleges that the tremendous developments of the mobile library concept in industrialized countries are not being reflected in developing countries. She adds that "technology in the form of computers and internet access, and even electricity, is scarce or "absent" in developing countries. The Academic libraries are completely in the dark and still use the card system to serve users. Only very, few have adopted the integrated management systems. In the opinion of (Laura Bolton Palumbo 2014), the mobile library concept remains an imagination far from reality in developing countries.

III. METHODOLOGY

An investigation to establish the contemporary status of mobile resource adoption in University libraries of both developed and underdeveloped nations was conducted on November 28th, 2016.

Research design

The survey involved analysis of the University library's website and that of the University for any links leading to the mobile library website or other mobile library application. Where no such link was established, a search was conducted for the term "mobile" in every accessible site search icon on the University's homepage. The findings were then explored for the presence of the mobile resources. Searches were also conducted on iTunes store and the Android market to establish whether there were any other services that would not have been advertised on the University's mobile web

In this study, we defined a mobile website as any website that can be accessed through the browser of a mobile device and is tailored to the mobile context. All the library websites that were accessible through the mobile devices were therefore considered mobile library websites. A Mobile application can be tricky to delineate, as it would mean any fully featured interactive mobile experience or a simple text-based online catalogue interface. The study defined a mobile application as downloadable content that can be used on a mobile device

Participants

The Universities were divided into two. Those in developed countries and those in under developed countries. It was imperative to divide the Universities:

- To realize the main objective of the study which is to explore the mobile resource espousal in University libraries across the globe
- Mobile library user needs vary; clientele from industrialized countries are presumed to have different user needs as compared to their counterparts in developing nations (Laura Bolton Palumbo 2014). The categorization is therefore necessary to enable a superior understanding on how to satisfy the mobile library resource needs of clientele.

Industrialized nations were selected as per the latest International Monetary fund (IMF) report 2016 (<http://knoema.com/nwnfkne/world-gdp-ranking-2015-data-and-charts>). The top economies as of 2016 are the United States, China, Japan Germany and the United Kingdom. The international monetary fund (IMF) keeps track of the world’s economic stands. It is an internationally recognized and ISO certified body that fosters global financial stability and sustainable economic growth. The credibility of its data was therefore under no doubt. China, Germany and Japan were however not selected because they are not English speaking nations. The report was then compared with the QS World University Rankings 2016/17 report (<http://www.topuniversities.com/university-rankings/world-university-rankings/2016>) to select high ranking research Universities among the world’s acme economies. The QS world University ranking is an annual confederacy table of the top higher learning institutions globally. It is compiled by the QS intelligence unit in close consultation with an international advisory body of leading academicians. Its credibility was therefore also assured. The first top three Universities as per the ranking were selected. These are Massachusetts Institute of technology (MIT) (United States), Harvard University (United States) and the University of Cambridge in the United Kingdom.

Developing countries were also selected based on data from the International Monetary Fund (IMF). High research institutions of higher learning in developing nations were also selected based on the QS World University ranking. Surprisingly, all developing nations were from Africa mainly Zimbabwe, Kenya and Uganda. Some Countries such as Central republic of Congo, Liberia, Burundi and Niger were shoddier than countries such as Kenya and Uganda but were not selected because they were not English speaking nations. There was also no significant difference in gross domestic product (GDP) of these Countries and the Countries selected; hence, there would be no significant effect on the study.

As per the QS world University ranking system, 2016, the University of Zimbabwe was selected in Zimbabwe, University of Nairobi in Kenya and Makerere University in Uganda.

IV. FINDINGS

4.1.1 Mobile library resource adoption in developed countries

All the three Academic libraries (Massachusetts Institute of technology library, University of Cambridge library and Harvard University library) had a mobile library website. However, they did not have a mobile application of their own. Two namely; Massachusetts Institute of technology (MIT), and University of Cambridge libraries had an icon on the mother Universities’ mobile applications. Harvard University library was still working on having an icon on the Mother University’s mobile application.

A total of 3 mobile library websites and 2 mobile applications were therefore analyzed for the presence of information resources. 11 classes of mobile services were ascertained as being common among the three Academic libraries based on evaluation of previous research and examination of the mobile web sites. The services are shown below

Mobile library services among the three Academic libraries
Library hours
Maps and directions
Catalog search
Account services/ managing personal accounts
Renewal of books
Book requests
Video recording tutorials
Electronic resources/journals
Booking reservations, books/single group discussions
Ask a librarian
Contact information

Table 1: Common mobile library services among the three Academic librarie

Massachusetts Institute of technology's (MIT) library was accessible through <http://m.mit.edu/libraries>. It did not have an application but had a library icon on the university's mobile application as mentioned above. Its services include library hours & locations for each library, Ask questions and meeting requests with the librarian, library news/ MIT Libraries' blog, library website search, database resources, staff directory, shortcuts to frequently used pages, check account services, book purchase suggestions, contact information, catalog search, social media icons for connection on twitter, Facebook etc, Renewal and book request, video recordings/tutorials, Single/group discussions and booking course reserves.

Harvard University library's mobile website was accessible through <http://lib.harvard.edu/mobile>. Its services include library hours, guide maps, contact information, electronic resources search the catalog, ask a librarian, interlibrary loan, library news and events, management of user accounts, Research support, video tutorials, group study etc. The library did not have a customized mobile application. The University however has a mobile application on which the library is working to add an Icon.

The University of Cambridge's mobile library website was accessible through <http://www.lib.cam.ac.uk/mob>. It also has a QR code on the website that can be scanned by the mobile device. Its services are; Search library collections, manage the library account, Find items on maps and floor plans, Link out to full text versions, See library locations and opening hours, View and renew loans. Place, manage and cancel requests, Build and email booklists, View your library profile, it also has social media icons where users can follow it on social platforms such as twitter and facebook, Just like Harvard University and Massachusetts institute of technology (MIT) libraries, the university of Cambridge library does not have a mobile application. It however has a library icon on the mother University's mobile application.

4.1.2 Mobile library resource adoption in developing countries

A similar investigation was conducted on Academic libraries in developing countries namely University of Zimbabwe (Zimbabwe), Makerere University (Uganda) and University of Nairobi (Kenya). As mentioned above the analysis began with a search to ascertain the presence of mobile library services on the University library website and the University website. After identification, the mobile library website and mobile library application were analytically catalogued and resources identified, as was the case with Academic libraries in developed countries.

The University of Zimbabwe's website and that of the library were analyzed for presence of mobile library services. The library's mobile website was accessed through <http://library.uz.ac.zw>. Its services include Ask a librarian, News and announcements; Group study room reservation, new book notification, calendar and Google search. The findings are also in harmony with the international network for the availability of scientific publications (INASP) on electronic-resource awareness report 2016 that had established similar services. The main mobile services noted in the report were access of electronic resources. There was however no link to the mobile library application.

Makerere University's website and that of the library were also analyzed for presence of mobile library services. The investigation also involved analysis of the two websites for any links leading to the mobile library website or the mobile library application. No link to either a mobile library application or the mobile library website was identified. Literature review did not also support presence of a mobile website or a mobile application at the University library.

The University of Nairobi's website and that of the library were also analyzed for presence of mobile library services. There were also no links leading to either a mobile library application or a mobile library website. Literature review did not also support presence of a mobile library website or a mobile library application at the University library.

V. DISCUSSION

Perhaps the most interesting bit of this study is the fact that no Academic library had a mobile application of its own despite being prime research centers of higher learning. One explanation for this would be the fact that mobile applications are not compatible with all mobile devices and therefore a mobile library website would have come in handy. In addition, the mother institutions of Academic libraries in industrialized countries had mobile applications and therefore no need of tailored library applications. Mobile applications are usually more resource initiative than mobile websites. Many Academic libraries have created a mobile website before creating a mobile application because applications require a much higher level of experience and proficiency to plot and create. They also allow access to content through additional access points on app stores. Their content is packaged and designed in a manner suitable for the mobile environment

Another key observation on academic libraries in industrialized countries was that they were comparable; every one of them offering clientele with nearly all optimized mobile graphical interfaces that ape the user milieu. Mobile library services in these Academic libraries were generally advanced and easy to access. The services were also accessible on both android and apple product mobile devices. Users would therefore

freely interact with the library services at their own convenience anywhere and at anytime. Evidently, the Academic libraries demonstrate the contemporary status of mobile resource adoption in developed countries as was predicted by (Thomas, 2011)

Two (Massachusetts Institute of technology library and University of Cambridge's library) had icons on their mother Universities' mobile applications while Harvard University library was on course to have one on its mother University's mobile application. The fact that apart from mobile websites Academic libraries had icons on their mother Universities mobile applications while one was in process of creating one shows how advanced the technology is in developed countries.

In a patent contrast to Academic libraries in industrialized countries, Mobile library services are a tale of the future to Academic libraries in developing nations as observed in the survey. For instance, only the University of Zimbabwe had some form of mobile library service among the 3 high research institutions of higher learning. Moreover, the services were not close to what would be expected of such a high research prime institution. For instance, the University of Zimbabwe's mobile library website took too long to load and only had shoddy services. A user would not be able to access his account, search the catalog or get library directions; some of the key services in the mobile library resource. Both the University of Nairobi's library and that of Makerere University did not have plans of adopting the services in the near future. These challenges would be attributed to financial constraints, lack of awareness and good will from both the libraries and mother institutions.

Despite the accessibility of mobile gadgets in many developing countries, the devices have mainly been used for communication, as technology in education has been reported as minimal (Kesselman et al., 2012). Technological availability, use and acceptance in developing countries has also been limited as observed in the study. Previous research also supports the findings and avers that mobile devices in developing countries are mainly used for text messaging as opposed to developed countries that use them as information retrieval tools (Kesselman et al., 2012). Librarians in these countries are also unaware of the current trends in the library world such as the mobile technology. Many still utilize the card catalog and the integrated library management systems through a few available desktop computers.

The observations between the two categories of Academic libraries i.e. those from developed and underdeveloped countries illustrate how big the technological gap is between Academic libraries in industrialized and developing countries. (Kesselman et al., 2012) shares the same views and notes that Academic libraries in many developing countries have not incorporated technology in their services

It is however predicted that Smartphone uptake in developing countries could impact technological adoption positively with the possibility of mobile libraries in the near future (Kesselman et al., 2012).

VI. CONCLUSION

Technology is habitually implemented with the sole purpose of augmenting efficiency and effectiveness in service delivery. The study is an apparent manifestation of the technological gap that exists between the two categories of Academic libraries with those in developed countries having polished mobile services as compared to their counterparts in developing countries whose services are shoddy or lacking. There is therefore the need for collaborations and networking among University libraries globally, good will and financial support from mother institutions in developing nations. There is also no doubt that mobile technology has come of age and surpassed traditional desktops as the main source of internet access (Ivana Pažur, 2014) Librarians in developing countries should therefore keep up with the current trends in the library world or risk being left behind.

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Masinde. "Investigation of Mobile Resource Espousal in University Libraries ." *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)* , vol. 22, no. 10, 2017, pp. 44–49.