

MOBILE TECHNOLOGY IN ACADEMIC LIBRARIES

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Abstract

The growing awareness, acceptability and usage of Mobile Technology in academic libraries, have been well documented in a lot of recent studies but how many of these academic libraries have really implemented the use of mobile technology in their services. This paper discusses mobile technology in academic libraries. The concepts mobile technology, academic libraries, mobile libraries were discussed extensively. Implementation of mobile technology and benefits of mobile technology in academic libraries were also examined. It was discovered that some challenges facing mobile technology in academic libraries were expensive resources, limited speed and storage capacities privacy, lack of trust and security, lack of staff awareness etc. It was therefore recommended that, libraries should make their website easily accessible via web-enabled mobile devices/library policies and services should be flexible and open. Finally, academic libraries that are yet to implement mobile technology should do so in order to improve and enhance the library services.

Keywords: Mobile Technology, Academic Libraries, Library Services

Introduction

The technological advancements have tremendously changed communication process. Mobile technology has made communication and information access very convenient and timely to users from the comfort of their own homes and offices, and from wherever they are while on the move with their mobile technologies (Malathy and Kantha, 2013).

Before the advent of Information and Communication Technologies (ICTs), communication in the library was done through books, newspapers, microforms, slides, etc. As scientific knowledge advanced, electronic communication systems began to develop. The use of

telephones and computers led to the Internet. The application of telecommunications to an automated library system can bring more efficiency to library services. Libraries are social institutions, connecting people with people and people with information. They are no longer just physical places as most library users own mobile technologies such as smart phones, IPAD, pocket laptop etc; it is time for academic libraries to take advantage of these mobile technologies. Mobile Technology will help both the novice and experienced librarians to stay relevant in a dynamic society, because they need to be aware of technological changes, peer forward, and prepare for the future of library mobile interaction. Librarians must be commensurate with this trend and integrate themselves into the mobile realm if they wish to deliver enhanced user services (Iwhiwhu, Ruteyan and Eghwubare, 2010).

Concepts of Mobile Technology and Academic Library

Mobile Technology

Mobile technology such as PDA (Personal Digital Assistant), smart phones and tablets are devices that allow one to create, access, organise and manipulate data in so many ways and forms from a point without any wire or any support connected in a particular spot (Regas, 2002). Kim, Mins and Holmes (2006) define mobile technology as technology that uses radio frequency spectrum in any band to facilitate transmission of text data, voice, video or multimedia services to mobile device with freedom of time and location limitation.

Mobile technology is exactly what the name indicates technology that is portable; it refers to any device that you can carry with you to perform a wide variety of "tasks". Examples of Mobile IT devices include: Laptop and notebook computers, Palmtop computers or personal digital assistants, Mobile Phones and "Smart Phones", among others. Mobile technology extends computing and the Internet into the wireless medium, and provides greater flexibility in communication, collaboration, and information sharing Virtual private networks i.e. secure access to a private network. Invariably, this technology provides unique learning opportunities and has advantage of portability and mobility. Academic libraries could use mobile technology in service innovations, m-learning, instruction in mobile device, web lectures, reference services and catalogue searching (Sudhir, 2011).

Since inception, mobile technology has positively influenced every aspect of life, enabling Nigerians to connect with different people, access information, create business opportunities, lower transaction costs and enhance social interaction (Okafor, 2016). The introduction of the

mobile technology in the 1980s have experienced considerable acceptance worldwide. The mobile technology has evolved from analogue to digital. The first generation mobile technologies were analogue, but subsequent generations have been predominantly digital.

Oyelami and Azeta (2012) opine that in Nigeria like in all other developing countries, the mobile technology has been instrumental to the rapid increase in telecommunications' accessibility. Before digital mobile telephone was introduced in Nigeria in 2001, the country had less than 500 thousand telephone lines. Today the story is different with the number of telephone lines in Nigeria now put at more than 90 million. To appreciate the rapid growth we are talking about, less than 10 years ago (1998), the African continent as a whole had about 14 million lines. In less than 10 years Nigeria has quadrupled the number of lines the whole continent had. In 2001 a new mobile phone technology known as the Global System for Mobile communication (GSM) was launched in Nigeria. GSM was one of the second generation (2G) mobile technologies in the world. However, GSM was a runaway success, dominating the digital cellular market with 70% of the market and more than 500 million subscribers in 169 countries in 2000. Econet wireless (later Vmobile, Celtel, Zain but now Airtel) was the first GSM mobile phone network to go live in Nigeria. They were later joined by MTN, Mtel, Glo mobile and Etisalat (now 9mobile). The mobile technology has contributed a lot to the development of Nigeria (Iwhiwhu, Ruteyan and Eghwubare, 2010).

Academic Library

According to Reitz (2004), academic library is a library that is an integral part of a college, university, or other institution of post- secondary education, administered to meet the information and research needs of its students, faculty, and staff. Dictionary of Information and Library Management (2006), defines academic library as a library which serves an academic community such as a university and college. Libraries throughout the world provide citizens with public access to networked information. According to Okiy (2014), academic libraries are libraries which are established in tertiary institutions. They include libraries in universities, colleges of education, and polytechnics". The aim of academic libraries is mostly to support teaching, learning and research endeavours of that institution. They are often regarded as a hub of knowledge due to the information resources found there. This type of library have conducive learning spaces or portals, and are created as central part of the institution to enable and inspire generations of thinkers through adequate provision (acquisition), storage (preservation), retrieval, circulation (dissemination) of reading, teaching, learning and research materials to

members of the academic community. The function of the academic library hovers around offering certified, qualified and adequate manpower for productive work. In accomplishment of this task and great role, Ahiauzu (2009), outline the functions as follows:

- To provide a conducive reading accommodation (including superhighway portals) to enhance learning.
- To provide appropriate information materials that can help students and faculty members in academic pursuits.
- To provide reference materials and bibliographic services at appropriate levels to aid research.
- To provide lending services appropriate to different types of users.
- To provide an active and specialized information service (this may extend to the people outside the academic community).
- To provide inter-library loan or exchange service in order to cover need for materials that are not immediately stocked or available.
- To provide collections (including audio visual) for leisure, recreation and personal development.
- To provide industrial training of students to gain practical work experience.

Mobile Library Services

The mobile technology creates and supports information systems that are integrated with people and processes in order to provide services in an effective and efficient manner. Mobile technology allows staff in the library to communicate with each other, avail the services they provide online and for the users to access the services in a flexible manner. The Mobile technologies modernise and improve the services the library provides. Mobile devices are gaining grounds in the academic environment and contributing in the way information is handled; .i.e. organised, received and disseminated. Academic libraries must adopt mobile services, having transformed from traditional libraries to hybrid libraries, to automated libraries and now library 2.0 and mobile technology services (Kumbhar and Pauer, 2014).

ICT has collapsed barriers and promoted fast communication and interactions across boundaries. The need to meet life's basic challenges and responsibilities has informed the invention and the use of information technologies (Ademodi and Adepoju, 2009). Libraries are deeply interested in channels for the transmission of information, such as telephones and telephone lines, cellular networks, cable television, and the Internet. Academic libraries are challenged in satisfying their customers' needs since their target market (researchers, lecturers, undergraduate, and postgraduate students) is demanding and dynamic. The Internet has made it possible for university teachers, researchers, and students to locate what they need without going to the library. If librarians in this sector are to continue to make substantial contributions as information disseminators, they will have to understand and exploit ICT infrastructure and emerging technologies in delivering services to their clientele (Ikhemuemhe, 2005).

Like most service institutions, academic libraries need to engage in marketing their products and services. From a marketing communications perspective, the challenge to most libraries is to attract users to the library and to retain them. If librarians wish to remain relevant, they must focus on the information provider/user relationship (Ekpenyong, 2003). Communication and interaction are generally important components of the process of relationship building. Popoola (2001) suggests that the academic library must ensure a closer relationship with its clientele. He posits that it is imperative for academic libraries to publicize their information products and services to arouse user interest.

Jacobs (2009) states that libraries may provide alerts on latest news, events and notices via SMS and MMS to users wherever they might be. The users can get notified instantly with notice alerts such as- alerts on bringing new books to the notice of users for suggestion, intimation of new arrival, informing availability of reserved documents for collection, appraising about overdue books, outstanding fines, reminders to return library items, renew books, library circulars, e-journals subscribed, change in timings, information about important events, loan request etc. Such alert notifications can be generated automatically using integrated library management system/software. SMS messages can be sent to group of users simultaneously through many free applications, and intermediary websites/clients.

Students are very versatile in using their mobile phones and various mobile applications. Academic libraries can harness this advantage to lead implementation of library services through mobile devices to support distance learning, formal education, and research activities in e-learning environment by making the information resources ubiquitous. Library services

should also blend with teaching and research practice of colleges/universities, scientific community or other patrons whom they serve. Some publishers are already delivering e-books (both text and audio) that are accessible via mobile phones. It offers access to a variety of databases and digital resources such as e-Books, e-Journals, Web databases, dissertations, audio books, streaming music, films, images and article databases which can be used on mobile. These collections can either be downloaded from the library websites on user's own mobile devices or libraries lend mobile devices with the collections already on them. Libraries can make use of multimedia messaging service (MMS) on mobile devices to share photos, videos, and audio. Most of the e-book publishers provide 24 hours x7 days access to the library subscriptions from any internet terminal within the campus, as well as on mobile devices, such as iPads, Android devices etc. (Saxena and Yadav, 2013).

According to Barile (2010), familiarity with devices and technology helps the users in accessing information quickly and does not require orientation and training. Mobile users are using the facilities on mobile phones like SMS, instant messaging, web browsing, and e-mail effortlessly to communicate. Most of these features are pre-installed on mobile devices or option for data plan packages. Personalised service helps users to interact with library staff to seek specific information or reference away from library. He stressed that information access from anywhere at any time will be of great help for users who cannot visit library in person and provides a constant link to required information resources. The mobile initiative comes along with its interactive capabilities, easy access to information, time saving, personalised services, user participation as well as limitless access.

Information managers as well as libraries should fully exploit the opportunities presented by this relatively new phenomenon with a view to providing improved products and services to the library users. Users want an information system that will meet their needs with far less stress and energy (O'Dell, 2009).

Mobile Technology in Academic Libraries Mobile communication is said to be the only technology that has been embraced and received massive acceptance in the developed and the developing countries within a short space of time. According to Ocran (2017), these devices have become an integral part of students study activities in most universities and other higher learning institution. Academic libraries are coming up with strategies for designing mobile technology-based services so as to meet the ever changing sophistication that characterises

their information needs and requirement of their patrons (Lippincott, 2010). The following are some of the strategies embarked by some academic libraries:

Mobile interfaces and online public catalogue: Libraries in their quest to offer tailor-made services are developing and providing access to mobile versions of their OPAC to their clients in order to render timely and without barrier services and resources to their patrons. Mobile OPAC ensures fast and quick retrieval of an item. Paterson and Low (2011) confirmed that 60% of students interviewed opined that it is convenient to search the catalogue anytime and anywhere.

Mobile collection and databases: Database publishers are using innovative strategies for mobile version of their databases for their clients to access both e-books and e-journals via their mobile devices. These databases are said to be mobile friendly as they easily interface with mobile device. These publishers include social science research networks and music online services that provide access to both video and audio recording. E-books readers make it possible to access these databases irrespective of their geographical location (Ocran, 2017).

Mobile instructions and mobile tours of the library: Fresh students who embark on their academic journey each year are introduced to instruction services in the academic library. These services are provided through mobile devices. Kroski (2008) observed that Youtube can be a best example for library tour video, podcast for mobile instruction services. The content of podcast provides immense benefits to distance students.

Short Message System Reference: SMS reference is widely known among mobile technology in academic library services. Paterson and Low (2011) opined that this service seeks to provide services to patrons from any location. It allows a library patron to send a text to a librarian with the use of their mobile phones. SMS appeals to both librarians and students. In order not to invade the privacy of students, Lippincott (2010) advice that students be made aware by librarians before a message is sent. Again, they observed that some reference queries go beyond SMS; however, such mobile reference services facilitate and ensure that synchronous reference transaction is performed in the quickest and convenient way.

Implementation of Mobile Technology in Academic Libraries

According to Ocran (2017), in implementing a mobile technology in academic libraries, there is need, first to recognise the stakeholders. For academic libraries, the following group must be considered before implementing mobile-based library services: students, faculty, staff, campus visitors, alumni etc. Other important ways are:

- Know the practical situation like, the kind of services to be provided on mobile devices and type of devices to be used.
- Library need to acquire the required hardware and software after market survey.
- Library must provide physical and virtual environment for using mobile devices and accessories.
- One needs to ensure that the customers having mobile phones of different network operators are in a position to avail the services.
- It is a prerequisite to optimize library OPAC, website, and databases for mobile devices and introduce new services wherever possible.

Security and authentication is a matter of concern in mobile services particularly due to availability of web contents on a 24 hours x7days basis to prevent damage or loss to the data. (Malathy and Kantha, 2013)

Benefits of Mobile Technology in Academic Libraries

User-friendly Aid: Familiarity with their own devices and technology helps the users in accessing information quickly and does not require orientation and training. Mobile users are using the facilities on mobile phones like SMS, instant messaging, web browsing, and e-mail effortlessly to communicate. Most of these features are pre-installed on mobile devices or option for data plan packages.

Personalised Service: Personalised service helps users to interact with library staff to seek specific information or reference away from library.

Ability to Access Information: Information access from anywhere at any time will be of great help for users who cannot visit library in person and provides a constant link to required information resources.

Time Saving: Users need not record information about resources while browsing and searching library resources or wait at library transaction counter to renew/reserve books and hence the time of the user is saved.

User Participation: Libraries can enrich OPAC by allowing users to incorporate user created content like notes or images uploaded by users.

Location Awareness: Mobile communication enables libraries to offer location-based services/content through Global Positioning System (GPS) capabilities. Libraries can guide the users to the location of specific document or service through maps and navigational tools.

Limitless Access: All online resources accessible on their desktop also become accessible through mobiles.

Access to Print-disabled Users: Mobiles communications help providing services orally to vision-disabled and physically handicapped users.

Challenges Facing Mobile Technology in Academic Libraries

Although mobile technology holds great promise for library services, there are some challenges faced in providing library services such as:

- Expensive and resource intensive
- Limited speed and storage capacities
- Digital rights management
- Access to information in the digital age.
- Reach of an external vendor into the digital collections and technologies - sustained access will be an extremely important issue for libraries if they adopt mobile Library technology and services that offer content from providers outside of the library.

- Another pressing concern about mobile technology in the library is privacy because of the risk that patron usage information can be used and exploited by law enforcement official and those who commit identity theft. Mobile technology is changing the relationship between libraries and their users--by expanding services and posing new challenges to reader's privacy.
- Issues related to trust and security - Libraries should be wary of entrusting user information to locations in the cloud that may offer a different level of protection from that provided by in- house library infrastructure
- Some of the digital content can only be accessed on certain devices, and this can have a "chilling effect" on learning and library service because it locks some people out.
- Lack of appropriate mobile-friendly academic content to meet learners' needs.
- Difficulty in supplying content to an increasingly mobile student body.
- Problems in finding and accessing the content needed for mobile learners from the Library perspective
- The use of wireless devices is increasing rapidly, yet there is concern in the scientific community that this technology could have adverse side effects.
- Lack of staff awareness and familiarity- Setting up text alerts, for instance, requires technical expertise from staff who understand how the library management system produces notifications, as well as staff or consultants who can help to set up an interface with a SIM card modem or a suitable service in order to deliver those notifications as text alerts (Sharma and Sahoo, 2014)

Mobile phones are still viewed by the majority of people as devices for making phone calls and text messages, so they often don't associate them with other activities, like information seeking. However, people are increasingly dependent on their mobile phones and there is a growing minority who do use them as diaries, for taking notes and for e-mail and internet access. As a result there may be an increase in expectation from Library users that libraries will provide some services in a mobile friendly way.

Conclusion and Recommendation

In concluding this study, it is an established fact that the emergence of Mobile Technology has become very essential in library services. It is impressive to note that there is a growing awareness of the importance and benefits of using mobile technologies in the libraries. Academic libraries are taking advantage of what these technologies present so as to provide enhanced information needs and services to its stakeholders. Libraries should make their website easily accessible via web-enabled mobile devices. Library policies and services should be flexible and open so that new information needs of users are met with new technologies. It is hoped that from this study, academic libraries that are yet to implement mobile technology should do so in order to improve and enhance the library services so that it is available to users at any place and any time.

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