



Global Imperative of Web 2.0 And 3.0 Technologies in Modern Libraries for Sustainable Development: Challenges and Opportunities for Nigerian Libraries

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Abstract

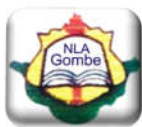
This paper discusses the Web 2.0 and 3.0 technologies as a platform in providing effective services in contemporary libraries for sustainable development in enhancing quick information to users. An exploratory approach through extensive review of related literatures was adopted for this study. Seven elements of digital media were adopted as the theoretical guide. The literature indicates that the conventional concept of library has continue to witnessed global phenomenon that is rapidly paving way to a digital/virtual space where users can access, communicate and contribute to existing knowledge without limitation to space and time. Modern libraries are gradually utilizing web 2.0 and 3.0 technologies to offer on the spot library services to users. These are made possible with the presence of social networking sites such as Facebook, Myspace, and Wiki, etc. which provide interactive platform for users to access and generate information content for effective information service delivery. The paper examines the global imperatives of web 2.0 and 3.0 technologies in modern libraries. Various challenges confronting web 2.0 technologies in Nigerian libraries were discussed. Opportunities of web 2.0 and 3.0 technologies in Nigerian libraries were also examined in the paper. The paper concludes that web 2.0 and 3.0 has become an imperative for the development of libraries and for effective and efficient information service delivery. The paper recommended that it is imperatives for the government to provide adequate training and re-training to librarians and other library staff in handling various web 2.0 and 3.0 technologies in the provision of adequate information service delivery.

Keywords: web 2.0 and 3.0 technologies, Internet, Facebook, Libraries, Information services

Introduction

Libraries from time immemorial have passed through various information service deliveries from clay tablet, papyrus, and animal skin to books, non-books and now digital/virtual information contents. Libraries as a concept are entrusted with tasks of acquiring, organizing, preserving, retrieving and disseminating information to users (Ezeani and Eke 2010). Contemporary libraries facilitate access to information, thereby providing the means through which new knowledge is developed and made available to users. However, in recent times, the web 2.0 and 3.0 technologies have revolutionized the format and style of providing library services (Ilo and Ifijeh, 2013). Libraries are using the web 2.0 and 3.0 technologies as a platform for their services to users. Because of this, the concept of library as physical place where one can visit to get information is rapidly changing to a virtual space where users can access, communicate and contribute to existing knowledge (Buhari, 2013).

Web 2.0 and 3.0 technologies offer “on the spot” library services to users. These are made possible with the presence of social networking sites such as Facebook, Myspace, Wiki, etc.



which provide interactive platform for users to access and generate content. Haliso and Ogungbemi. (2014) state that the most applicable web 2.0 technologies for library services is the social networking tools – where librarians can interact with their users to study their needs and give feedback; photo sharing – where archival pictures can be posted to users or uploaded on the library website. Totolo (2015) asserts that the web 2.0 technologies have played a significant role in improving learning and research among students and researchers. Web 2.0 technologies are two-way transparent communication that encourage a feedback mechanism; connecting people with shared interest. Web 2.0 technologies allow librarians to adopt a new role by placing themselves into a social realm with users. Ezeani and Eke (2011) opine that by reading blogs, group postings, and message boards, the librarian becomes an active participant, who is able to anticipate and advise patrons as needs arise. Linking to patron profiles also keeps the library within the consciousness of users, potentially increasing interaction. Totolo (2015) maintains that the dynamic nature of web 2.0 and 3.0 technologies enables users to have an open access to knowledge and contribute local content on the social network space.

Contextual Setting

Web 2.0 and 3.0 technologies in libraries have become an indispensable phenomenon in global information provision and dissemination. For example, Tortorella (2012) studied the differences of Web 2.0 and 3.0 technologies among university students and faculties in their perception and use of social networking in the United States of American. He found that librarians provide web 2.0 and 3.0 services to the undergraduate students and faculty members. The study also found that most undergraduate students used the services as an entertainment feature, and most faculty members were not active users of this technology. He suggested making social networking site-based services for enhancing effective interaction and research based. Similarly, Ullah (2015) studied the impacts of social networking on college students in Pakistan and the Netherlands. They found that Indian students spend more time in making use of social media than Dutch students which were mostly passive. Dutch students, on the other hand, participate more actively than Indian students by posting and engaging in interaction using social networking sites.

Another study conducted in India by Khan, Masrek and Nadzar (2015) investigated the perception and use of web 2.0 and 3.0 technologies among Sikkim University students. The study showed that a good number of university students use web 2.0 and 3.0 technology for academic purposes in addition to entertainment. Facebook was the most used social networking site followed by Twitter. In Kuwait, Al-Daihani (2013) explored the use of social network among the master students in library and information science at Kuwait University as compared to those at the University of Wisconsin-Milwaukee in the USA. He found that the majority of students from the two schools were aware of social software applications and their use.

In Nigeria, the National Bureau of Statistics (2017) report indicates that only 4.5% of the Nigerian population has access to personal computers (PC). Access implies those who either own a PC or can derive benefits from it. According to the report, only 0.9% of the population can claim ownership of a PC. However, access and usage of the Internet and other digital technology have greatly increased among Nigerians in recent times largely due to mobile technology and social media (Premium Times, 2016). A published report has reveals that about 70% of the Nigerian population uses the Internet and mobile technology services (Premium Times, 2016). The same report also indicates that more than 98% of Internet users in Nigeria gain access to the Internet through mobile telephone networks. However, despite



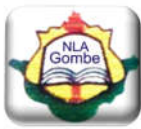
that access and usage of web 2.0 and 3.0 technology has improve access to dissemination of information and also enhance closeness of library services to users, gaps still exist as not all users has access to mobile technology services and the expensive to obtain data for internet connectivity. Access to mobile technology services and ability to find and utilize information from the mobile technology platforms constitute the effective use of web 2.0 and 3.0 technology. Furthermore, modern libraries can achieve its goes if librarians and users embraces web 2.0 and 3.0 technologies use for library services. Some of the reasons ascribed to the increasing rate in the use of social networking in libraries are: ease of use, intuitiveness and ability for direct and immediate online publication and distribution of user content. Before the advent of web 2.0 technologies, library holdings were predominantly in print, but, evolution in Information and Communication technologies, materials in electronic formats are now included in library collections, the collection scope has changed from local contents to global networks (Davis, 2016). Adaja and Ayodele (2013) posit that using social media has the potentiality to harness academic excellence in youths in Nigeria as two-thirds of Nigerian youths use Facebook and other social media platforms to socialise. The study showed that over 80 per cent of the respondents use Facebook. Similarly, over 38 million Nigerians have web presences through social networking sites, primarily Facebook and Twitter. The majority of Nigerians used handheld devices, such as phones, iPads and tablets to view and update their profiles on these social media. Most Nigerians used social media for social interaction and, to a lesser extent, for information gathering (Business Day online, 2013; and Ogbe, 2014).

Theoretical Background

The seven elements of digital literacy model were developed by JISC (2014). The theory views digital media advancement from seven elements: ICT literacy, information literacy, media, career and identity, communication and collaboration, digital scholarship, and learning ability. The information literacy element encompasses the ability to identify, locate, evaluate, organize and effectively create, use and communicate digital information to address issues or problems at hand. Media literacy focuses more on the nature of various digital medium and the way in which messages are constructed and interpreted.

The perspective of digital media is characterized by individual ability to recognize the context of media and understand the meaning of the message and its content. ICT literacy element is concerned with the interest, attitude and ability of individuals to appropriately use ICTs to access, manage, integrate and evaluate information. In addition, the ICT literacy element also relates the correct use and installation of ICT facilities and services. Communication and collaboration element proposes ability to clearly express ideas and build trust through the process of communication and collaboration with the use of digital tools. Learning skills element involve the ability to understand and use information in multiple digital formats to learn through practical skills in using digital technology to access, manage, manipulate and create information in an ethical and sustainable way. Digital scholarship encompasses awareness; attitude and ability to use digital tools identify, access, manage, integrate, evaluate, analyze and synthesize digital resources. Careers and identity element is concerned with the transformation of individual thinking capacities, career development particularly in understanding new digital tools, techniques and identity.

The advantage of this model is that it encompasses digital literacy in addressing digital technology environment though integrating elements that constitute digital literacy. The model is criticized for not fully embracing digital literacy as a foundational literacy at par with socio-cultural linguistic issues (JISC, 2014). In the context of this study, the seven



elements of digital media models were adopted because digital innovation is critical in digital transformation and innovation as imperatives for global advancement in digital technology development.

Global Imperatives of Web 2.0 Technologies in Modern Libraries

The importance of web 2.0 technologies in libraries cannot be overemphasized. This is because it has become a pivot in which libraries depend around the world depends to provide fast and up-to-date information (Ansari, 2013). The position of libraries is central in the provision of information with web 2.0 technologies. Ezeani& Eke (2011) and Totolo (2015) list some examples of the web 2.0 technologies to include:

- Facebook: most modern libraries are popular in using Facebook because it is librarian- friendly, with many applications like JSTOR search, World Cat, and much more. Librarians can interact with users to know their information need. Libraries try to link some of these specialized library applications to Facebook.
- Myspace: libraries have taken advantage of this site to improve their presence and marketing their information services to the general public.
- Ning: libraries and librarians can get connected with users, library associations, and more. Many world leading association like International Federation of Librarianship (IFLA), American Library Association (ALA) utilizes this platform to discuss topical issues among the members.
- Blogs: Here, libraries can periodically post messages; share information on a particular subject or issue, and allow users to contribute to content. They can write articles, news on topical issues and expect an instant reaction from their users.
- Wikis: is a free online encyclopaedia that gives background knowledge and definition of concepts. It offers a platform for users to access, edit and contribute to content. This is a collaborative web page for developing web content.
- LinkedIn: libraries can get patrons connected with specialists in their particular field of interest via LinkedIn. Librarians can use this platform to render specialized services such as Strategic Dissemination of Information (SDI).
- Twitter: a micro blogging application, to keep staff and patrons updated on daily activities, like frequently updated collections. Users can utilize this platform to type in short messages or status update. Librarians can use this platform to give users current information. Users can send Instant Messages (IM) on complaints or ask questions on particular issues and get feedback on the spot using twitter.
- YouTube: libraries can show events such as important highlights of inaugural lectures, conferences and workshops via the YouTube.
- Flickr: libraries can use this tool to share and distribute new images of library collections. Cover page of new arrivals of both books and journals can be disseminated to users via Flickr. It can also be used to enlighten users on topical issues.
- Google Scholar: libraries can use this platform to assist users in searching for academic literature published in various field of endeavour and on various topical issues. Google scholar provides current and up-to-date information on scholarship.
- Mendeley: mendeley is an online citation of references that assist users in acknowledging research publication through proper citation. Libraries assist users through workshop and conference to enlighten users on the proper citation of references.



- Google Chrome: Google Chrome is an important search engine that assists the users to carry-out research with ease. The provision of Google Chrome by libraries has made it easier for users to access current literatures

Challenges of Web 2.0 and 3.0 Technologies in Nigerian Libraries

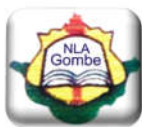
In Nigeria and other developing countries, libraries are faced with the challenges of using the web 2.0 and 3.0 technologies to provide information services despite its numerous benefits it offers (Echezona, 2015). Though, one of the remarkable trends brought by web 2.0 technologies in modern libraries has to do with level of decrease in the number of physical visits to libraries by the users (Asogwa et al., 2015). Academic and research libraries are becoming less important for materials they collect or house. Instead, their importance is being measured in terms of the extent to which user's needs are fulfilled. They have transformed from just being buildings to vast collections of online resources that users can access from off-campus, in classrooms, offices or any location around the world, especially in the case of distance learners (Abubakar and Adetimirin, 2015).

According to Ezeani and Igwesi (2014) one of the challenges libraries in providing information service with web 2.0 technologies has to do with apathy, lack of awareness and phobia militate against use of the web 2.0 technologies in most libraries especially in developing countries. In research conducted by More so, Ezeani and Igwesi (2014) found out that insufficient bandwidth and obsolete Internet facilities which they described as moribund are inhibiting factors to using web 2.0 technologies in Nigerian libraries. Adekunmisi (2013) also affirmed that although some library staff had positive views about the effectiveness of Internet tools, but it is negatively affected by indecision to implement it and poor acceptance by the user community.

In addition, erratic power supply hampers utilisation of Internet tools in most developing nations of the world. Power supply in some parts of Nigeria is still unstable. Akinwale (2013) and Iwayemi (2014) lamented that irregular supply of electricity is common in most cities and towns in Nigeria. In the same vein, Ajayi, Shorunke and Aboyade (2014) bemoaned that erratic nature of electric power supply in Nigeria is another problem that confronts academic libraries. This situation adversely affects use of the Internet, electronic information resources and other Internet-based resources.

According to Echezona (2015), connectivity in Nigeria is poor, unreliable, scarce and very expensive. He further maintains that the Internet services are almost never dedicated and users have to contend with frequent service outages at very slow speed. (Asogwa., Ugwu and Ugwuanyi (2015) attributed the high cost of Internet connectivity in Nigeria to limited availability and capacity of national fibre backbones. National fibre backbone is the main cable connecting other cables and linking them to the international traffic in a country. Momoh and Abdulsalam (2014) in their study found out that many staff has no access to the Internet either at home or in their offices. This depicts the state of Internet connectivity in Africa.

Web connection of many libraries in Nigeria is very low for these institutions to enjoy most of the multi-media services and on-line academic facilities available on the Internet. Many of the academic libraries still use Store and Forward Connection and others are connected with dial-up facilities with the bandwidth limitation due to the poor telephone facilities Haliso and Ogungbemi (2014). Some of the Universities have dedicated line access, even though the



VSAT satellite facilities offer tremendous opportunities and can eliminate in many cases the problem of poor telephone lines (Solanki, 2014).

Lack of training of staff in the use of the Internet is also a challenge in handling web 2.0 technologies in providing effective service delivery in libraries. Most library staff lacks skills and competencies that are necessary for the use of Internet tools in library services.

Opportunity of Web 2.0 Technologies in Nigerian Libraries

Before the advent of web 2.0 and 3.0 technologies in Nigerian libraries, library holdings were predominantly in print, but, with the web 2.0 technologies, materials in electronic formats are now included in library collections, the collection scope has changed from local contents to global networks (Davis, 2016). The use of web 2.0 and 3.0 technologies has attracted the interest of scholars because of its advantage and convenience over traditional services in libraries and most users have readily taken to using the internet to find their information (Echezona et al., 2015).

The web 2.0 and 3.0 technologies offer a wide range of free, professional tools that are used by academic libraries to for a variety of purposes. In recent years, a number of digital and networking tools have emerged on the Internet. Globally, these tools facilitate communication, secure information sharing, and collaboration between a host and the public over the Internet. Nigerian libraries now use web 2.0 and 3.0 technologies to facilitate communication, secure information sharing, interaction and socialization among its users (George, Maina and Wanangaye, 2016). Web 2.0 plays a key role in the dispensing of information, knowledge, and communication services in libraries. As librarianship strives to evolve in response to the needs of the Internet generation, the use of web 2.0 has become an indispensable tool in the work of librarians. Rehman and Shafique (2013) state that web 2.0 technologies are blessings for librarians, as they can design attractive services using web 2.0 applications. Web 2.0 tools enable libraries to reach out to a larger number of users, entice potential patrons to use library resources and services, and deliver improved patron-driven services (Davis, 2016).

The web 2.0 and 3.0 technologies have greatly impacted the way users are attracted to use library collections. Umar (2011) notes that there is a dramatic increase in the level of use and patronage of web 2.0 technologies particularly the use of Facebook and YouTube in University libraries in the Northeast states of Nigeria. Solanki (2014) asserts that the powerful figure of the web has revolutionized the way people are accessing information and opened up new concepts and possibilities in many areas, such as electronic or digital libraries. These changes convinced Asogha et al, (2015) to opine that the Internet had significantly changed the characteristics of information delivery in libraries and had empowered users to easily access not only the resources in their own libraries but also those in other libraries.

Baro and Asaba (2013) investigated the state of Internet connectivity and use in Nigerian university libraries and found that despite the laudable efforts by the National Universities Commission (NUC) to network university libraries in Nigeria, many libraries were still facing challenges of web 2.0 technologies. Odusanya and Egberongbe (2011) found that in the University of Lagos in Nigeria, 58% of the medical and dental students in their final year used the Internet in their studies. Mishra (2012) surveyed the use and importance of the Internet at the University of Maiduguri in Nigeria and found, among other things, that the Internet was very important to a majority of the participants, Google was most frequently used as a search engine, and slow access to the Internet was identified as the major problem with Internet access in Nigeria.



Ilo and Ifijeh (2010) studied the impact of the Internet on final year students' research projects at Covenant University, a private institution at Ota in Nigeria. The researchers discovered that all of the 150 respondents used the Internet for their research. On the kind of sources the students used to access their materials, priority was more on online journals, online books and online newspapers and magazines. Ossai-Ugbah (2010) also examined the extent to which the use of electronic information services by students influenced the academic performance of students in three tertiary institutions in Nigeria. Uwaifo&Azonobi (2014) surveyed the factors militating against the use of the Internet by post-graduate students of the library and information science department at Delta State University in Abraka, Nigeria, and found that: having pre-university computer literacy did not account for better academic performance and students who made use of electronic library services were better exposed to academic materials and performed academically better than those who did not make use of these services. Ezeani (2011), in a research on network literacy skills of academic librarians for effective services delivery in Enugu, showed that librarians used social media for personal communication rather than to enhance professional practice. The findings showed that the majority of the respondents believed that use of social media would not enhance library services. Among professionals outside librarianship, the use of social media has gained high acceptance and use for professional purposes.

Sokoya et al. (2012), in researching the use of social media by agricultural researchers in Nigeria, found that they mainly use social media to connect to professional colleagues. The research showed that the agricultural researchers used social media to share knowledge, gain skills and collaborate with others for purposes of research and in publishing research findings. Use of web 2.0 in Nigerian libraries to carry out library services has not been well researched; however, a number of studies have been done which point to the fact that a lot of Nigerians, especially youths, are using these tools (Asogha, et al, 2015). Adaja and Ayodele (2013) posited, in a study on using social media to harness the potential for academic excellence in youths in Nigeria, that two-thirds of Nigerian youths use Facebook to socialise.

Study of students in a University in Southwest Nigeria showed that over 80 per cent of the respondents use Facebook. Similarly, over 38 million Nigerians have web presences through social networking sites, primarily Facebook and Twitter. The majority of Nigerians used handheld devices, such as phones, iPads and tablets to view and update their profiles on these social media. Most Nigerians used social media for social interaction and, to a lesser extent, for information gathering (Business Day online, 2013; and Ogbe, 2014). Some researchers have even pointed at the negative effect of social media use by Nigerian youths, citing mass failures in national examinations and the inordinate amount of time spent on social media sites as the result of unhealthy behaviours (Adedeji, 2011; Akindehin & Akindehin, 2011; Ajewole & Fasola, 2012).

Conclusion

The emergence of web 2.0 technologies has brought change to the functional and operational services provided by the libraries. This is because web 2.0 technologies have improves and promotes library services thereby closing the gaps in information search and retrieval. Globally, the world is moving fast and web 2.0 technologies have become a key for information provision. It is imperative for librarians to acquire new Internet competency skills required for effective functional library services. Librarians are required to acquire such knowledge and competencies, as the library is one of the highly Internet-influence service professions. The empowerment of librarians with Internet competency is aimed at providing services that are expected by the clientele in the new environment.



Recommendations

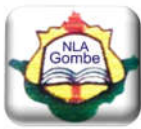
- It is imperative for Nigerian libraries to provide various web 2.0 technologies in meeting contemporary information deliveries
- It is imperative for Nigerian libraries to adopt to the new changes brought by web 2.0 technologies in providing effective information services
- It is imperative to provide adequate training and re-training to librarians and other library staff in handling various web 2.0 technologies in the provision of adequate information service delivery.

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