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Web 2.0 tools: a survey of awareness and use by librarians in university libraries in Africa

Emmanuel E. Baro

The University Library, Federal University, Otuoke, Nigeria

Nelson Edewor

The University Library, Federal University of Petroleum Resources, Warri, Nigeria, and

Godwin Sunday

The University Library, Niger Delta University, Amassoma, Nigeria

Abstract

Purpose – This paper aims to investigate the level of awareness and use of Web 2.0 tools by librarians in university libraries in Africa.

Design/methodology/approach – A questionnaire was used to collect data from 140 librarians from 16 leading university libraries in Africa.

Findings – The study revealed that librarians in Africa are mostly familiar with Web 2.0 tools such as social networking sites (Facebook, Twitter, etc.), blogs, instant messaging and wikis. It was also found that the most frequently used Web 2.0 tools by the librarians in university libraries in Africa are Facebook, instant messaging, blogs, Twitter and wikis. The study revealed that the librarians use the Web 2.0 tools for the purpose of announcing library news/events, online reference services, training resources, blogging and image and video sharing with users. Finally, lack of skills, power failure, lack of facilities such as computers with Internet access, lack of time and lack of interest were mentioned by the librarians as some of the challenges to using Web 2.0 tools.

Practical implications – These research results can also be consulted by interested librarians when they plan to make Web 2.0 applications in their libraries.

Originality/value – This study draws an overall picture of the Web 2.0 applications in university libraries in Africa and attempts to provide these libraries with helpful information to better understand how their colleagues elsewhere are utilizing Web 2.0 technologies in rendering library services.

Keywords Africa, University libraries, Librarians, Web 2.0 tools

Paper type Research paper

Introduction

Web 2.0 influences the way in which people learn, access information and communicate with one another. According to Abram (2005, p. 1):

Web 2.0 is ultimately about a social phenomenon – not just about networked social experiences, but about the distribution and creation of web content itself, characterized by open communication, decentralization of authority, freedom to share and reuse, and the market as a conversation.



Oberhelman (2007, p. 5) notes that:

Web 2.0 refers generally to web tools that, rather than serve as a forum for authorities to impact information to a passive, receptive audience, actually invite site visitors to comment, collaborate, and edit information, creating a more distribution form of authoring in which the boundaries between site creator and visitor are blurred.

Web 2.0 has been referred to by others as: a second generation of web-based tools and services (Guntram, 2007), and a community-driven online platform or an attitude rather than technology (Downes, 2005). For many others, Web 2.0 refers to a group of technologies such as blogs, wikis, podcasts, RSS feeds and so forth, where everyone is able to add and edit the content, creating a socially networked web environment (Anderson, 2007).

Since the term Web 2.0 was coined by O'Reilly in 2004 (Chad and Miller, 2005), it has grown into one of the most popular words in our current network environment, unquestionably extending its influence to the library community. The creation of the term "Web 2.0" generated other related terms such as Library 2.0, Librarian 2.0, User 2.0, Learning 2.0 and Information Literacy 2.0. The term Library 2.0 first appeared in September 2005 in a post by Michael Casey in his blog LibraryCrunch, alluding to the term Web 2.0 in an attempt to associate library community more directly with its concepts and tools. Library 2.0 as a concept was described as greatly different from the traditional library services that operate according to the expectations of users. It was referred to as the introduction of Web 2.0 technology tools in library services (Chad and Miller, 2005). It basically represents myriad viewpoints concerning how academic librarians can utilize Web 2.0 tools for disseminating information and for enhancing their services.

Libraries in the more developed world have already experimented with the application of Web 2.0, and they have enjoyed the new paradigm of a more enhanced relationship with library users through participation and two-way communication using Web 2.0 tools. Miller (2005) had warned that libraries in developing countries must act fast to reap the potentials of Library 2.0. Although several studies have been conducted in the field of Web 2.0 applications, many concentrate on a specific aspect of Web 2.0 technology and a case study. According to Lwoga (2011, p. 2):

[...] the use of Web 2.0 in Africa is still at infancy stage. In order to improve the quality of education, African universities should take advantage of innovative and emerging technologies and consider the learning preferences of the Net generation or digital natives.

Similarly, Benda (2011) studied the use of social networking tools by librarians at the Copperbelt University, the University of Zambia and the Mulungushi University in Zambia. The researcher reported that social networking tools are hardly being used for work-related activities by librarians in Zambia. Presently, there are not many studies on the overall applications of Web 2.0 in university libraries in Africa. It is against this background that this study attempts to investigate the level of awareness and use of Web 2.0 technologies by librarians in university libraries in Africa.

Research questions

Specifically, the following research questions will be addressed in the study:

RQ1. To what extent are librarians in university libraries in Africa aware of Web 2.0 tools?

RQ2. To what extent do librarians in university libraries in Africa use Web 2.0 tools?

RQ3. For what purposes do librarians use the Web 2.0 tools?

RQ4. Through what method do the librarians acquire the skills to use Web 2.0 tools?

RQ5. What are the challenges the librarians face in using Web 2.0 tools?

Literature review

Awareness of Web 2.0 tools by librarians

Libraries have to become part of the Web 2.0 universe in order to serve their patrons. Web 2.0 services currently offered by libraries include bookmarking, user-added reviews/ratings/summaries, blogs, wikis, RSS feeds (Really Simple Syndication), podcasts, vidcasts, instant messaging (IM), tagging, social networking sites, streaming audio and video, chat, community photo services, community book services, Twitter, reader's advisory, book lists and maintaining a virtual library in Second Life (Tripathi and Kumar, 2010; Parker, 2008). Emphasizing the need to reach out to where users are already interacting, Miller (2006, p. 2) states that:

[F]undamental to the changes we anticipate for libraries is a shift from the delivery of library services just within the library building, or simply from a library's own web site. As well as continuing to offer services to those who come to us, we need to reach beyond the boundaries of the library space, and begin pushing services out to people in the places where they are already interacting.

Libraries are now adopting some of the interactive technologies to engage students. Gross and Leslie (2008) enumerated some of the Edith Coan University Library initiatives as follows:

- A staff library blog is being used in the current Web OPAC review process.
- A library blog is being developed as a communication tool for their clients; a wiki is being used to discuss hot issues in the library.
- They are experimenting with del.icio.us to share bookmarks among teens.
- Their range of podcasts is being expanded; they are using Camtasia to deliver information literacy to students; and they are promoting RSS feeds as database alerts to their users.

Facebook, MySpace, Twitter and del.icio.us are just a few of the social networking options available on the Internet today. The Oxford English Dictionary Online (2010) defines social networking as the use or establishment of a social network or connections, and the use of web sites which enable users to interact with one another to find and contact people with common interests. The rise of online social networking tools is rooted in the emergence of Web 2.0. Due to the high use of social networks among young people and college students, many academic librarians advocate using these new social web platforms to reach out to the student population (Farkas, 2007a; Milstein, 2009). According to Breeding (2007, p. 23), "I see Web 2.0 as helpful to the extent that it helps librarians let go of very out-dated views and adopt newer technologies and services".

Adah (2012) enumerated six reasons libraries should use social media. They are:

- (1) to build awareness and promote the library and programs and services;
- (2) to manage the library's brand and reputation – which include the accuracy of information shared about the library;

- (3) to establish leadership as the community's provider of choice for research and readers' advisory;
- (4) to improve library services based on customer feedback;
- (5) to provide an avenue for customer-contributed content; and
- (6) to reach new and inactive patrons or customers.

Some researchers advised that by not following technological innovations and trends on the web, libraries will not be able to compete with services such as Amazon or Google and may lose their position as primary information providers (Coyle and Hillmann, 2007; Sadeh, 2007). Dr Christine Bruce, Professor in the faculty of Science and Technology of Queensland University of Technology, Australia, in a keynote speech entitled, "*The Experience of Information Literacy and Learning: Reflections on Social Media*", cited in Wang (2011), points out that Web 2.0 tools can certainly be effective and prominent tools for developing information literacy. She further stated that researchers have been noticing that the deeper meaning of Web 2.0 is symbolizing a new understanding of the nature of information literacy; that is, information literacy itself is a social, collaborative, continuous and creative process of knowledge learning and construction.

A study by Charnigo and Barnett-Ellis (2007) revealed that librarians in general remain in large part uncertain about the role of Facebook in libraries and most have strong concerns with regard to the online privacy issues it raises for patrons. The researchers also reported that librarians appear to be comfortable using Facebook as a way of peering with the students they serve as patrons and trying to gain a better understanding of them as information customers. Findings from a recent study suggest that librarians are aware of the Facebook phenomenon, and that those who are enthusiastic about social networking suggest the idea of using Facebook to promote library services and events (Khan and Bhatti, 2012).

Wikis are the mix of many other technologies like messaging, blogging, streaming media and tagging (Maness, 2006). A library wiki as a service can enable social interaction among librarians and patrons, essentially moving the study group online. Wikis can be used to create help files and tutorials with the help of users in libraries (Maness, 2006). According to Rehman and Shafique (2011, p. 8):

[...] the Web 2.0 technologies are providing the opportunity of powerful authoring tools using wikis and blogs and can also be used for marketing of library services on the Web.

They added that as most of Web 2.0 applications are offering services for free, libraries with low budgets can reap the benefits from these technologies without cost.

Use of Web 2.0 tools by librarians

Facebook has proven to be universally addictive for college-age students who tend to spend a considerable amount of their time maintaining social connections, making new acquaintances and maintaining a broad base of friends during their years of study. A study by Garoufallou and Charitopoulou (2011) showed that the most frequently used tool was Facebook. It was used by 47.8 per cent of those studied. One of the primary uses of Facebook by academic libraries is to market the library with a library fan page.

King (2011, p. 1), a digital branch and service manager in a public library, made the following observations:

I spent part of the day connecting with people. I complained about a silly election video, chatted with a college friend about a band, and put some finishing touches on plans for a conference taking place at the library. I did all this through Facebook. These days, it seems like everyone has a Facebook account.

Facebook now appears to be the most logical social networking web site to be used by an academic library. Using Facebook applications, some academic libraries embed the library catalogue to allow students to access the content of the library catalogue without actually visiting the library's web site (Farkas, 2007b). Recent statistics of the Internet and Facebook usage show that, as of 31 December 2011, there are about 4,369,740 Facebook users in Nigeria (Internet World Stats, 2012). On any given day, 70 million users log on to Facebook to view profiles, and post information about themselves and others (Loving and Ochoa, 2011). Bosch (2009) reported that the most important advantages that Facebook has over other conventional course management software is that students use Facebook in a much more consistent fashion that includes logging in and staying logged on even late at night, on weekends and during vacations and holidays.

Flickr, an online image-sharing application, is being used to share images within communities and has become a very good source for sharing events with the help of images and image sets. It allows users to upload, share and tag images with keywords. These tags are very useful for retrieving relevant images (Angus *et al.*, 2008). Flickr allows users to post photographs and to create discussion groups. While Flickr is known largely as a photo-sharing web site, it also allows users to post videos. Academic librarians post photos of the library and the staff to provide a virtual tour of the library while simultaneously putting a human face to the building. Academic libraries can also post materials from special collections on a Flickr account, although a general search of Flickr reveals that most academic libraries predominantly use Flickr to post pictures of the library building and its staff (Farkas, 2007b).

Han and Liu (2010) reported that they did not find any library among the 38 top Chinese university libraries with an account on photo- or video-sharing sites such as Flickr or YouTube to promote a collaboration community initiative. Libraries have realized that their patrons want to interact with the library web site, just as they have the ability to interact with YouTube. Garoufallou and Charitopoulou (2011) studied the use of Web 2.0 tools by Greek Library and Information Science (LIS) students. The study revealed that YouTube and Flickr were the second most used Web 2.0 tools after Facebook by the students. They added that it appeared that students who use Flickr tend to use YouTube as well.

Wiki usage in the Chinese university library community is quite underdeveloped and, for all intents and purposes, it remains an unavailable service (Han and Liu, 2010). A study of wiki usage among academic librarians revealed that, private wikis that allow only authorized users to edit and read the contents were the most common, and represented 50 per cent of the wikis created by academic libraries using the new technology. These were followed by semi-private wikis with 31.8 per cent, which allow anyone to read the contents, but only authorized users can edit the page (Chu, 2009). Podcasts are audio content available on the Internet that can be delivered to a personal computer or MP3 player (Geoghegan and Klass, 2005). The podcasts give the user an opportunity to listen to recorded intellectual outputs online with additional software and to download for later use. Harinarayana and Raju (2010) found that out of 57 university

library web sites examined, only three (5.26 per cent) of them have integrated podcasts into library web-based services, mainly for providing information about library tours, library updates and news. Vidcast/video tutorials also have been used in six (10.52 per cent) libraries for training on how to use library resources and access various services (Harinarayana and Raju, 2010). Han and Liu (2010) lamented that even the 38 top Chinese university libraries are still at the very early stages of Web 2.0 development. For example, the study revealed that, among these Chinese university libraries, no library used podcast or vidcasts. Abram (2005) in his study suggested several areas of application of podcasts in libraries. They are:

- story hours/story times (record children's librarians);
- information literacy and research help;
- collecting and indexing good free podcasts (found through the podcast search engines);
- local history (collections of veterans, pioneers, local characters, etc.);
- teen book/DVD/game reviews (collected by the circulation desk);
- music collections;
- audiobook collections (on iPods and MP3 players);
- library events (e.g. science fair help, literacy nights, author readings);
- library debates;
- archiving class lectures;
- library marketing podcasts (e.g. how to use RSS, databases, VR);
- training; and
- public speaking training (in participation with local groups).

Purposes of using Web 2.0 tools by librarians

Comments suggest that blogs are the best informal communication channel to extract feedback information from the users to enhance the quality of library services (Harinarayana and Raju, 2010). Harinarayana and Raju (2010) found that 15 (out of 57, 26.32 per cent) of the university libraries in India have used blogs to promote their library services. The researchers stated that the percentage of usage is low, which is a surprising result considering the popularity of blogs and their widespread application. One possible reason, according to the researchers, is that the library users use different blog spaces and do not depend on their library's blog space. The purpose for which blogs are used by the university libraries in India range from being created for specific subject blogs to keeping users current with subjects of interest, and being created to provide news and library services (Harinarayana and Raju, 2010). The libraries at Cornell University (<https://blogs.cit.cornell.edu/askalib>), Case Western Reserve and the University of Rochester (<https://rheesblog.lib.rochester.edu>) have successfully implemented blogs for their web-based reference services (Harinarayana and Raju, 2010).

In recent years, university librarians have also become friends of Facebook, using bundles of evolving functions to promote, organize and improve access to their collections. Libraries advertise hours, location and web site information. By linking to the library's web site, the Facebook page acts as a portal to the library (Farkas, 2007a).

Libraries also send out invitations by using event invitation programs as an additional forum to promote library activities (Chu and Meulemans, 2008). IM is also a very useful tool which may help library professionals to provide library services. IM is being used massively for online reference services in libraries. The Ask-A-Librarian service is provided by IM messengers all over the world. A study of the top 100 university libraries in India shows that IM features have extensively been used in libraries to provide quick online reference services. The study reported that 37 (out of 57, 64.91 per cent) of the university library web sites in India have provided facilities for online reference services (Ask-A-Librarian/Ask Us feature) using IM technology (Harinarayana and Raju, 2010). Users, instead of visiting the library physically, can ask questions through chat messenger and get the answer instantly. Meebo (a web-based IM application) has been used extensively by libraries to provide IM virtual reference service (Harinarayana and Raju, 2010). While IM reference services are somewhat more prevalent compared to other Web 2.0 tool applications such as wiki or podcast, it is quite underdeveloped in Chinese university libraries (Han and Liu, 2010).

The most popular social bookmarking web site is del.icio.us. The site allows users to befriend other users to see what they tag and to view other web sites tagged with a particular keyword (Dickson and Holley, 2010). According to Kroski (2007), academic librarians can use social networking to create resources lists for different departments and classes that can be viewed by students. Class reading lists and bibliographies can be created easily by tagging the resources with the department and class number. Some libraries add the content and tags from their del.icio.us account to the library catalogue to create access points for materials that are not adequately described by the existing Library of Congress Subject Headings (Dickson and Holley, 2010). RSS is a simple, lightweight XML format to share web site content (Celikbas, 2014). RSS aggregator applications installed in a library system and coupled with the social network of the library will enable users to have a single, customized personal library page that syndicates all the library content of interest to them and their research, eliminating irrelevant information (Chand *et al.*, 2008). A number of libraries are offering RSS (Really Simple Syndication, also known as Rich Site Summary or RDF Site Summary) feeds to their patrons. In the case of libraries, the feeds can alert patrons about new acquisitions, library events, exhibitions, changes in hours and so forth (Chand *et al.*, 2008). RSS content can be read using software called "RSS reader", "feed reader" or an "aggregator". The user subscribes to a feed by entering the feed link into their reader or by checking an RSS icon in a browser that indicates the subscription process.

Methodology

The authors used the survey research method. A comprehensive review of the literature was conducted. A questionnaire was developed and used for data collection (Appendix). It was amended after some input from other librarians and used for the study. Items cover areas such as the extent to which librarians in university libraries in Africa are aware of Web 2.0 tools, the extent to which librarians in university libraries in Africa use Web 2.0 tools, the purposes the librarians use the Web 2.0 tools, the method the librarians use to acquire the skills to use Web 2.0 tools and the challenges the librarians face in using Web 2.0 tools. The questionnaire was sent to librarians in university libraries in Africa via e-mail. Their e-mail addresses were collected from the institutions' websites. Librarians from 16 leading universities in Africa participated in the survey.

The universities were selected from the 2012 World University Web Ranking of top 100 universities and colleges in Africa (www.4icu.org/topAfrica/). The questionnaire was forwarded to 310 librarians in the 16 university libraries starting in April 2012. To raise the response rate, reminders were sent after one month. Data collection was completed by August 2012. In total, 140 respondents with a response rate of 45.2 per cent were used. The completed and returned questionnaires were downloaded, printed and used for data analysis. A simple percentage was used to analyze the data, and the results are presented in tables and bar charts (Table I).

Findings

Out of the 140 respondents, 74 (52.9 per cent) indicated male, while 66 (47.1 per cent) are females. Respondents were asked to indicate their qualifications. Seventy-four (52.9 per cent) indicated they were MSc degree holders, 56 (40 per cent) bachelor degree holders and 10 (7.1 per cent) PhD holders in LIS. Fifty-six (40 per cent) of the respondents indicated their title was Assistant Librarian, 27 (19.3 per cent) Librarian II, 22 (15.7 per cent) Librarian I and 17 (12.1 per cent) Senior Librarians. Others are: eight (5.6 per cent) of the respondents indicated Principal Librarians, and five (3.6 per cent) each Deputy University Librarians and University Librarians (Table II).

Discussion

Awareness of Web 2.0 tools by the librarians

The respondents were asked to indicate whether they know, don't know or only heard of Web 2.0 tools (Table III). Social networking (e.g. Facebook, Twitter) was the most popular with 125 (89.3 per cent), while seven (5 per cent) admitted they don't know, and eight (5.7 per cent) had only heard about social networking. One hundred eight (77.1 per cent) of the respondents indicated that they know about blogs, while 21 (15 per cent) admitted that they don't know, and 11 (7.9 per cent) had only heard about blogs. One hundred five (73 per cent) indicated they know about IM, while 23 (16.4 per cent)

S/N	Name of University	Country	No. of questionnaires sent	No. of respondents
1	University of Ghana	Ghana	24	5
2	Makerere University	Uganda	16	9
3	University of Johannesburg	South Africa	28	13
4	University of KwaZulu Natal	South Africa	11	5
5	Rhodes University	South Africa	14	8
6	University of Pretoria	South Africa	24	9
7	University of Cape Town	South Africa	19	1
8	University of Dar es Salaam	Tanzania	10	3
9	University of Malawi	Malawi	9	1
10	University of Namibia	Namibia	21	12
11	Covenant University, Ota	Nigeria	19	6
12	University of Abuja	Nigeria	22	8
13	University of Benin	Nigeria	25	19
14	University of Ibadan	Nigeria	26	15
15	University of Lagos	Nigeria	15	11
16	University of Calabar	Nigeria	27	15
	Total		310	140

Table I.
Responding universities
in Africa

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	<i>Gender</i>		
	Male	74	52.9
	Female	66	47.1
	Total	140	100
872	<i>Qualifications</i>		
	BLS	56	40
	MSc	74	52.9
	PhD	10	7.1
	Total	140	100
	<i>Staff positions</i>		
	University Librarian	5	3.6
	Deputy Univ. Librarian	5	3.6
	Principal Librarian	8	5.7
	Senior Librarian	17	12.1
	Librarian I	22	15.7
	Librarian II	27	19.3
	Assistant Librarian	56	40
	Total	140	100

Table II.
Demographic information
of respondents

Web 2.0 technologies	I know	(%)	I don't know	(%)	Only heard	(%)
Blogs	108	77.1	21	15	11	7.9
Wikis	104	74.3	25	17.9	11	7.9
RSS feeds	81	57.9	41	29.3	18	12.9
Social networks (e.g. Facebook, Twitter)	125	89.3	7	5	8	5.7
Instant messaging (IM)	105	73	23	16.4	12	8.9
Social bookmarks	75	53.6	43	30.7	22	15.7
Media sharing	93	66.4	25	17.9	22	15.7

Table III.
Awareness of Web 2.0
tools

Note: *N* = 140

indicated they don't know, and 12 (8.9 per cent) had only heard about IM. One hundred four (74.3 per cent) indicated that they know about wikis, while 25 (17.9 per cent) indicated they don't know, and 11 (7.9 per cent) indicated they had only heard about wikis. RSS feeds, social bookmarks and media-sharing sites were the least known Web 2.0 tools with 81 (57.9 per cent), 75 (53.6 per cent) and 93 (66.4 per cent), respectively.

The results show that librarians in Africa are mostly familiar with Web 2.0 tools such as social networking sites (e.g. Facebook, Twitter), blogs, IM and wikis. This finding agrees with the findings of [Kwanya *et al.* \(2012\)](#) that the most popular Web 2.0 tool in Kenya's libraries is Facebook, followed by Twitter. The study by [Mansor and Idris \(2010\)](#) also revealed that there is high awareness among the International Islamic University Malaysia librarians with Library 2.0 applications. Awareness needs to be created for the librarians to know more about other Web 2.0 tools such as RSS feeds, social bookmarks and media-sharing sites like YouTube, Flickr and so on. This can be done through training workshops organized for librarians. This will raise the level of

awareness and usage among librarians in university libraries in Africa. The study by [Mansor and Idris \(2010\)](#) found that International Islamic University Malaysia librarians hold positive perceptions of Web 2.0 applications. Their findings also indicated that most of the librarians had positively accepted the idea and bought Web 2.0 applications into the library.

Use of Web 2.0 tools

The respondents were asked to indicate their level of utilization of Web 2.0 tools with a scale from 1 to 5, where 1 indicated *no use* and 5 *used frequently* ([Table IV](#)). The results show that the most frequently used Web 2.0 tool is Facebook (45 per cent), followed by IM with 22.9 per cent; blogs with 20 per cent; Twitter with 17.9 per cent; and Wikis with 17.1 per cent.

Other Web 2.0 tools mentioned were:

- YouTube with 13.6 per cent;
- RSS feeds with 12.1 per cent;
- social bookmarks with 6.4 per cent; and
- Flickr with 5 per cent, and podcasts with 1.4 per cent.

These Web 2.0 tools were indicated to be the least used by the librarians.

The study revealed that the most frequently used Web 2.0 tools by the librarians in university libraries in Africa are: Facebook, IM, blogs, Twitter and wikis. This finding is in agreement with earlier studies that the most frequently used Web 2.0 tool by academic librarians is Facebook ([Kwanya *et al.*, 2012](#); [Garoufallou and Charitopoulou, 2011](#); [Harinarayana and Raju, 2010](#)). [Kwanya \(2011\)](#) conducted a study related to Web 2.0 tools in Kenya. He specifically focused on the potential of Library 2.0, based on Web 2.0. Also, the author reported the challenges the libraries in Kenya face while adopting Web 2.0 tools. They are:

- inadequate ICT infrastructure;
- unstable bandwidth;
- lack of technical skills among the librarians and users;
- conservative culture and natural lag in adopting new technology;

Web 2.0 technologies	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
Facebook	20.7	12.1	14.3	7.9	45
Flickr	55.7	21.4	13.6	7.3	5
YouTube	39.3	18.6	17.9	10.7	13.6
Instant messaging	33.6	18.6	11.4	13.6	22.9
Blogs	30.7	15.7	17.1	16.4	20
Wikis	39.3	12.1	12.9	18.6	17.1
RSS feeds	45.7	17.9	16.4	7.9	12.1
Podcasts	65.7	17.1	10	5.7	1.4
Social bookmarks	50	13.6	14.3	15	6.4
Twitter	39.3	19.3	9.3	14.3	17.9

Notes: 1 = no use through; 5 = very frequently use; *N* = 140

Table IV.
Use of Web 2.0 tools

- ignorance or lack of appreciation of the potential of Web 2.0 tools especially among older users;
- lack of supportive policies, strategies and plans;
- perceived low credibility of Web 2.0 content; and
- inadequate financial resources.

Librarians in developing countries can use Facebook as a better communication channel with students. This will promote the library and its services in a faster and easier way. Library 2.0 is about constantly improving yourself, your institution and the way you reach out to your users. In this phase of evolution, we should definitely work to respond quickly in a quickly changing environment.

Libraries in Africa need to change and adapt to the needs of customers. [Harinarayana and Raju \(2010\)](#) stated that Web 2.0 has attracted the attention of libraries around the world as a means for promoting and extending their services. Libraries in the USA have been using many Web 2.0 applications to promote and market library services since their inception. Conversely, many libraries have feared this paradigm shift in communicating library services to their users because of traditionalist values, and tend to cite an unsubstantiated fear of possible security breaches to their online systems and integrated library systems ([Rogers, 2009](#)). According to [Dickson and Holley \(2010, p. 477\)](#):

[...] social networking by academic libraries has the potential to reap great results, but librarians must consider the most effective methods for their particular library and student population.

Web 2.0 tools are a new technology offering promising new outreach options for academic librarians. Many academic librarians advocate reaching students in their preferred environments to extend library services beyond the traditional library walls ([Miller, 2006](#); [Farkas, 2007b](#); [Wang, 2011](#)).

The purposes of using Web 2.0 tools

Librarians were asked the purposes for which they use Web 2.0 tools ([Figure 1](#)). Eighty per cent indicated using the Web 2.0 tools for library news/events, followed by 69.3 per cent indicating that they use Web 2.0 tools for online reference services. In all, 63.8 per cent indicated using Web 2.0 tools as training resources, while 56.4 per cent indicated using blogging, and 52.1 per cent indicated using Web 2.0 tools for image and video sharing. Other purposes the librarians use some of the Web 2.0 tools are social tagging and bookmarking (50 per cent) for collaborating with colleagues in other libraries (41.4 per cent). The study revealed that the librarians use the Web 2.0 tools for the purpose of announcing library news/events, online reference services, training resources, blogging and image and video sharing with users. Librarians in Africa should see the need to utilize Web 2.0 tools such as IM for an effective online reference services. In a like manner, podcasts/vidcasts have also been found to be effective tools for training students on how to use library resources. These findings agree with the findings of [Han and Liu \(2010\)](#) that the utilization of social networking services in top Chinese university libraries is mainly for publicizing library events, accessing library resources, providing reference services and sharing photos. The National Library of Australia uses a variety of social media for notifying about news, relevant items from the collection and library

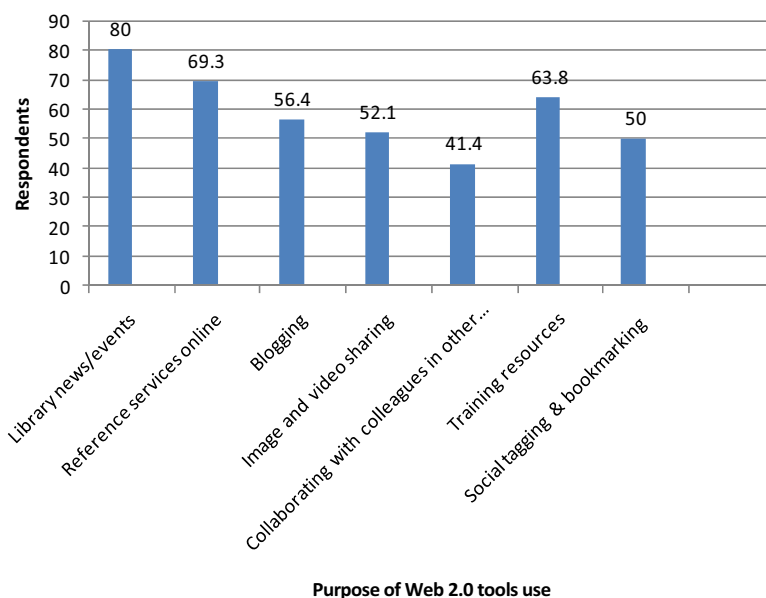


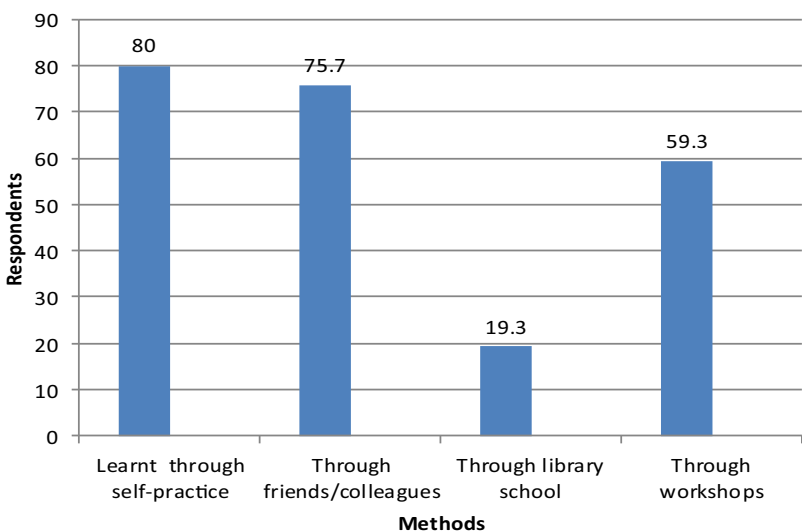
Figure 1.
Purposes the librarians
use Web 2.0 tools

events. Facebook is used by the library to inform the library users about major events, activities and recent acquisitions through posting photos, videos and links to resources about the library. Some libraries use YouTube for sharing videos of many of the events held at the library. Presentations and talks organized on different topics by the library are disseminated via podcasts (NLA, 2014). Web 2.0 tools have been seen as potential tools for delivering information literacy programs to students.

Methods the librarians used to acquire skills to use Web 2.0 tools

Librarians were asked to indicate the means through which they acquire skills to use the Web 2.0 tools (Figure 2). Eighty per cent indicated acquiring the skills through self-practice. In all, 75.7 per cent indicated acquiring the skills through friends/colleagues and 59.3 per cent indicated acquiring the skills through workshops attended. Only 19.3 per cent indicated acquiring the skills through library schools. Needless to say, this question was included to clarify suspicions that librarians may have acquired the skills of using Web 2.0 tools from the library schools. The study revealed that librarians in university libraries in Africa acquire the skills to use Web 2.0 tools mainly through self-practice, followed by through friends/colleagues, and through workshops. Acquiring the skills from library schools was the least indicated by the librarians. This calls for inclusion of a separate course on Web 2.0 tools in the library schools curricula. Emphasizing the need for incorporating a “Web 2.0” course in library schools, Rehman and Shafique (2011) stated that, “it is necessary to get formal trainings from experts”. The teaching of Web 2.0 tools in African library schools will prepare the next generation library staff for the challenges ahead. Therefore, the researchers call for further research on the extent to which library schools in Africa have integrated Web 2.0 tools’ use into their curricula.

Figure 2.
Methods used to learn
Web 2.0 tools



Challenges faced when using Web 2.0 tools
Lack of skills. To determine hindrances for using Web 2.0 tools, respondents were asked to indicate the challenges faced in using Web 2.0 tools (Figure 3). The majority (82.1 per cent) of the librarians indicated a lack of skills to effectively use the Web 2.0 tools. For the librarians to remain relevant in this digital era, training and re-training is required for the librarians. This can be done by professional bodies in collaboration with non-governmental organizations to organize training workshops on Web 2.0 tools, and university administrators should do well by sending librarians to attend short training workshops or seminars to equip the librarians in university libraries in Africa with the

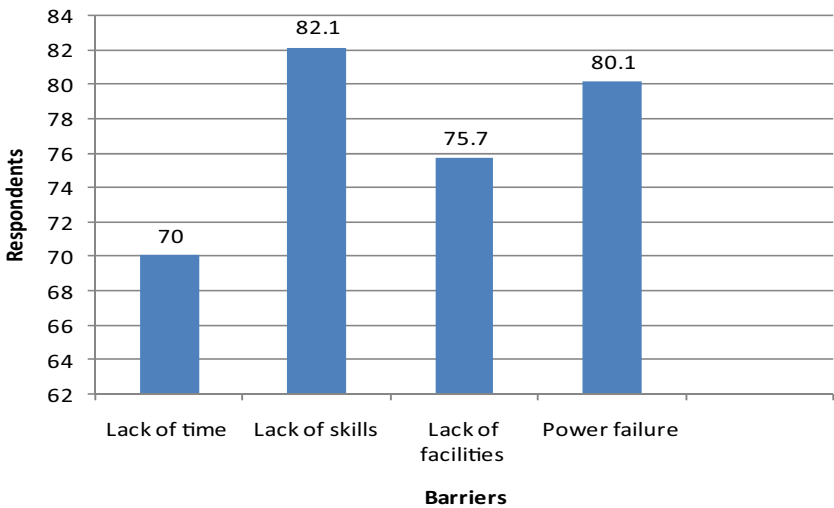


Figure 3.
Barriers in using Web 2.0
tools

needed digital skills to effectively use Web 2.0 tools. Chisenga (2012) asserted that librarians in Africa should acquire skills that would enable them to make use of social media in their work. They also need to develop suitable social media strategies for their libraries. Mansor and Idris (2010) found that the majority of the respondents had indicated that training on the various applications of Web 2.0 tools in libraries is important.

Power failure. The result showed that 80.1 per cent of the respondents indicated power failure as a barrier in using Web 2.0 tools. Libraries in the digital era cannot operate successfully without a stable power supply. This may be why Baro and Asaba (2010), in their study of Internet connectivity in university libraries in Nigeria, asked respondents if there is a standby generator to provide stable electricity in the libraries. They found that many university libraries do not have a functional generator to provide stable electricity in their libraries. Stable electricity supply is a *sine qua non* in the use of Web 2.0 tools. Efforts should be made to provide stable power supplies to enable librarians in Africa to fully utilize Web 2.0 tools in their libraries.

Lack of facilities. More than half (75.7 per cent) of the respondents indicated lack of facilities, such as modern computers with Internet access, to use Web 2.0 tools. This finding agrees with Rehman and Shafique (2011) that lack of computer literacy, unavailability of computers and Internet facility were the main hindrances toward the adoption of Web 2.0 technologies in Pakistani libraries. Constant Internet access in the university libraries in Africa is a necessity in the use of Web 2.0 tools. Baro and Asaba (2010), in their study of Internet connectivity in university libraries in Nigeria, revealed that only a few university libraries, despite the laudable directives from the National Universities Commission, have stable and reliable Internet access in their libraries. If librarians in university libraries are to fully utilize Web 2.0 tools to enhance their service delivery, modern computers with stable Internet access must be provided in the libraries.

Lack of time. Concerning the time factor, 70 per cent of the librarians indicated lack of time to use Web 2.0 tools. This finding reinforces the earlier finding of Boxen (2008) that lack of librarians' time is a concern, in particular with social media games that are frequently labor-intensive. According to Dickson and Holley (2010, p. 476):

[...] libraries must create guidelines on response time to answer student questions on social networking platforms [...]. These guidelines must address staff absences and vacations so that the social networking services remain consistent while still allowing librarians to take vacations or attend conferences.

Students expect timely responses to any inquiries sent through social networking tools. They are unlikely to return to social networking tools for library assistance if librarians do not respond quickly to inquiries. Academic libraries engaging in social networking with students must address issues regarding consistent and timely responses for these new service tools.

In the "Others, please specify" option, respondents mentioned the following: "clients don't always participate" (mentioned by three), "technophobia" (mentioned by two), "network failure" (mentioned by seven), "lack of interest" (mentioned by four) and "lack of qualified IT personnel to train others" (mentioned by two). According to one respondent, "lack of foresight might be considered an inhibitor as well, I think that innovation is a major barrier towards the use of Web 2.0". These findings agree with

Benda (2011) who found that the non-use of social networking tools for work-related activities by librarians in Zambia is as a result of various reasons which include:

- bandwidth challenges;
- lack of time by librarians to use social networking tools;
- lack of knowledge; and
- no interest.

The librarians need to embrace the Web 2.0 technologies to render quick and effective library services to our online communities. Tanzania Library and Information Association organized a 3-day workshop between the 15th and the 17th of June, 2011, for members to introduce them to Web 2.0/Library 2.0 applications for library service provision. The aim of the workshop was to empower librarians and information professionals to understand how Web 2.0 technologies, such as synchronous messaging and streaming media, blogs, wikis, social networks, tagging, RSS feeds and mash-ups, might improve the way libraries provide access to their collections and support users to access information. This kind of workshop, if frequently organized by library associations in developing countries, will raise awareness, interest and librarians' IT skills. Interestingly, one respondent from Rhodes University wrote:

I consider myself competent in the use of Web 2.0 technologies both on a personal and professional capacity. My institution makes use of blogs, wikis, RSS feeds, social networks, and social bookmarking. I have personal FB and Twitter accounts.

Librarians at an academic institution must be proactive in their social networking attempts and must be willing to participate in the ongoing process. There is no point in creating an account on a social networking platform if it is not going to be used or updated.

Conclusion

The results of the study showed that librarians in Africa are mostly familiar with Web 2.0 tools such as social networking sites (e.g. Facebook, Twitter), blogs, IM and wikis. Next, the study revealed that the most frequently used Web 2.0 tools by the librarians in university libraries in Africa are Facebook, IM, blogs, Twitter and wikis. Furthermore, the study revealed that the librarians use the Web 2.0 tools for the purpose of announcing library news/events, online reference services, training resources, blogging and image and video sharing with users. It also emerged that librarians in university libraries in Africa acquire the skills to use Web 2.0 tools mainly through self-practice, through friends/colleagues and through workshops. Finally, lack of skills, power failure, lack of facilities such as computers with poor Internet access, lack of time and lack of interest were mentioned by the librarians as some of the challenges that will hinder them from using Web 2.0 tools.

In the last few years, the development and popularity of Web 2.0 tools usage has become enormous. This development has made libraries around the world integrate Web 2.0 features such as RSS blogs, wikis, user tagging sites (e.g. del.icio.us), IM and social networking sites, like Facebook and Twitter, into their library websites. Librarians in university libraries in Africa should utilize all the Web 2.0 tools, but most especially RSS feeds to render online reference services, just as their counterparts in developed countries do. The use of Web 2.0 tools will take the library services to where

the user community is already present, create an information-sharing culture and facilitate user participation by making useful suggestions into the management of libraries.

Recommendations

Based on the findings of this study, the following recommendations are made:

- Library schools re-design their school curricula to incorporate a course on Web 2.0 to enable them to prepare future library staff for the new challenges ahead.
- Library associations and universities mostly in the developing world, in collaboration with non-governmental organizations, should regularly organize capacity building workshops on Web 2.0 tools usage.
- University management should provide the necessary facilities, such as computers with constant Internet access, to be able to use Web 2.0 tools in university libraries.

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Awareness and Use of Web 2.0 Technologies by Librarians Questionnaire (AUWTLQ)
The Library
Niger Delta University
Bayelsa State
8th April, 2012

Dear Sir/Madam,
I am a Librarian conducting research on the above mentioned topic. I therefore solicit your help by providing answers to the following set of questions. I promise that the information obtained through this excise will be strictly used for academic purpose.

Thanks for your anticipated co-operation.
The researchers

Please complete the following information about your background.

Name of University -----

1. Gender (a) Male [] (b) Female [].
2. Qualification (a) BLS [], (b) MLS [], (c) Ph.D []
3. Staff Position/Designation -----

1. To what extent are you aware of the following Web 2.0 technologies? Tick (✓) as appropriate.

Web 2.0 technologies	I know	I don't know	Only heard
Blogs			
Wikis			
RSS feeds			
Social networks (e.g. Facebook, Twitter)			
Instant Messaging (IM)			
Social bookmarking			
Media sharing			

2. Rate your use of the following Web 2.0 tools.
Note: 1 indicates no use - 5 very frequently used

Web 2.0 tools usage	1	2	3	4	5
Facebook					
Flickr					
YouTube					
Instant Messaging					
Blogs					
Wikis					
RSS					
Podcasts					
Social bookmarks					
Twitter					

(continued)

Figure A1.

3. For what purposes have you used Web 2.0 tools?

Purposes	Yes	No
Library news/events		
Reference services online		
Blogging		
Image and video sharing		
Collaborating with colleagues in other libraries		
Training resources		
Social tagging & bookmarking		

Others, please specify -----

4. Through what means did you learn the skills to use Web 2.0 tools?

Means of acquiring skills to use Web 2.0 tools	Yes	No
Learnt through self-practice		
Through friends/professional colleagues		
Through library school		
Through workshops		

Others, please specify -----

5. What are some of the barriers librarians face in using Web 2.0 tools?

Barriers	Yes	No
Lack of time		
Lack of skills		
Lack of facilities (e.g. computers with Internet access)		
Power failure		

Others, please specify -----

Figure A1.

About the authors

Emmanuel E. Baro (corresponding author) holds a master's degree in Library and Information Science from Delta State University, Abraka, Nigeria. He works as a Senior Librarian at the Federal University, Otuoke, Bayelsa State. Emmanuel E. Baro is the corresponding author and can be contacted at: karaperekumor@yahoo.com

Nelson Edewor holds a master's degree in Library and Information Science from Delta State University, Abraka, Nigeria. He works as a Librarian 1 at the Federal University of Petroleum Resources, Effurun, Delta State.

Godwin Sunday holds a bachelor's degree in Library and Information Science from University of Calabar, Cross River State, Nigeria. He works as an Assistant Librarian at the Niger Delta University, Amassoma, Bayelsa State.