Challenges and Opportunities in Migrating To Web-Based Library and Information Services

Chinyere C. Orji
(chinyerechris49@yahoo.com)
Enugu State College of
Education Technical Enugu

Nathaniel Agbo Oche (CLN)
nathanieloche@gmail.com
Polytechnic Librarian
Benue State Polytechnic,
Ugbokolo

And

Christian C. Orji
(christianorji45@yahoo.com)
Enugu State College of
Education Technical Enugu

Abstract

This paper focuses on the challenges and opportunities in migrating to web-based library and information services. As patrons continue to make greater use of the Internet/Web, libraries now use web-based services to facilitate access to their resources and services. Migrating to web-based library services will create an environment where access to information resources and services are no longer constrained by time and space. This paper also highlights some web-based resources and services for accessing information from libraries, such as access to online databases, WEB-OPACs, electronic journals, online reference services, Bulletin Board service, web portals, virtual library tours, etc. Challenges facing the migration process are also discussed while suggestions and recommendations are made.

Keywords: Web; web-based library services, library webpage, OPAC

1.1 Introduction

In the recent years, the traditional methods of rendering library and information services have greatly changed. This is consequent upon the rapid technological innovations and their applications to library and information services. The Internet and web technologies are especially used in rendering library and information services to users whose demands and expectations have also considerably changed. Libraries world over are exploring and offering new web-based library services such as web catalogues, web search engines, web forms, online reference services, web-based user education, web portals and so on, to satisfy the library and information demands of their users (Syed, 2002). As a result, library users can access library resources in the comfort of their homes, offices, etc., without being physically present in the library. Library users value the services that they access from their desktops because the services save time. Traditional library services have been transformed into internet-based online services using web-based technologies. Despite their tremendous potentials, web-based services have also brought new challenges that must be overcome in order to increase effectiveness and efficiency of libraries in especially developing countries. This paper among other salient issues discusses some of these new challenges and suggestions to improve or strengthen web-based library and information services.

1.2 Concept Clarifications

Web: The web is client or server system used to access all kinds of information on the net. To access information from the web, use of

Libraries which subscribe to these databases can now access them over the web. Some examples of these databases are OARE, HINARI, AGORA, EBSCO Host, JSTOR, etc (Imeremba 2005).

iii. Electronic Journals

Electronic journals form a large part of the collection of a library providing web services (Bhatnagar, 2005). Today we have many journals in different disciplines which are available electronically. Libraries subscribing to electronic journals need not necessarily provide access to it in the library. Through the library's functional website/webpage, users can access electronic journals through the web without taking the pains of visiting the library.

iv. Online Reference Services

Whereas the traditional library reference services focuses on information access within and between the physical boundaries of libraries, web-based reference services owe their increasing popularity among libraries to the increasing and urgent need to extend library services beyond the library's physical location. The goal of web-based reference services is to meet the demand for easy 24-hour access to electronic reference sources by library users irrespective of their physical location. Libraries can upload the services of their reference desk on their website so as to create a 24-hour access to users.

v. Web-Based User Education

User education includes all the activities involved in teaching users how to make the best possible use of library resources, services and facilities, including formal and informal instruction delivered by a librarian or other staff members one-on-one or in a group (Murugan, 2013). Web-based user education provides a high degree of interactivity and flexibility to users (Bhatnagar, 2005). The library web sites can use web-based user education to train users in basic library skills along with glossary of library terms; locating books, magazines, biographical data and other library materials; understanding how to navigate the libraries website and how to select the most relevant database; instructions for searching CD ROM and guidance in locating web-based databases and other electronic resources; and searching the internet resources through search engines.

vi. Virtual Library Tours

Virtual library tour is a web-based library service used to provide a virtual guide to the facilities, collections, services and infrastructures of a library. Libraries can upload videos of these facilities on their website thereby providing a guide to users irrespective of their physical or geographic location. Library maps, floor plans, library departments/sections and photographic views can be used to guide users in virtual library tours.

vii. Online Circulation Services

Circulation is an area that impacts most library users and involves personalized user information. So it makes sense that libraries would be interested in making comprehensive and personalized services available to users via the web. According to Borasky (1999) web-based access to patron accounts means that users can access their personal information about items checked out, due dates, renewal and reserve facilities, etc. at their convenience. The more advanced services like renewals and holds mean that users can manipulate and interact with the circulation system without having to come to the library to queue or talk to a library staff. This saves the time of the user.

viii. Web Portals

As patrons continue to make greater

client programme called browser is necessary (Pathak, Mishra and Sahoo, 2008). In the web, information are stored in pages and each page can hold not only information but links to other pages.

Web-based library services:

"Web-based library services are those services which librarians provide using websites as a means to facilitate access to specific Internet and other digital resources" (Gbaje, 2007). Also, Madhusudhan and Nagabhushanam (2012) described web-based library services as library services provided using the Internet as a medium and library website as a gateway with the help of integrated library management system. Web-based library services provide the unique service of linking to full-text articles, integrating library house-keeping operations, library policies, staff listings, etc. for timely help.

Library webpage:

Library webpage is very much valuable for any library. Pathak, Sahu, and Pathak (2010), see it as a useful tool to keep informed about library activities and new services (as cited in Pathak, Mishra and Sahoo, 2008). All libraries must maintain a functional webpage if they must remain relevant in this technology advanced age. Libraries may put services on the web such as the library collection, library hours, library rules, Current Awareness Services/Selective Dissemination of Information, reference services, new books, recent issues of journals, list of subscribed online journals, etc.

2.1 Review of Related Literature

2.2 Web-Based Services in the Library

There are different kinds of web-based resources and services for accessing information from libraries. Such resources and services include but not limited to the following:

- OPAC/Web-OPAC
- Online Databases
- Electronic Journals
- Online Reference Services
- Web-based User Education
- Virtual Library Tours
- Online Circulation Services
- Web Portals **i. OPAC/Web-OPAC**

The ALA Glossary of Library and Information Science (1983) defines OPAC as a computer-based and supported library catalogue. It is designed to be accessible via terminals, so that library users may directly and effectively search and retrieve bibliographic records without the assistance of a human intermediary. Using the library OPAC, information searchers can access bibliographical records of a variety of available information resources independently. Online Public Access Catalogue when made available on the web is called *Web OPAC*. Web OPAC is simply an improved version of OPAC. The library website becomes a more logical gateway to the catalogue and web-based library resources. An information home page introduces users to helpful information about the library, its collections and services. The major feature of Web OPAC according to Hatua (n.d.) is that it offers libraries the opportunities to have access to various resources of other libraries on the web.

ii. Online Databases

Online databases are collections of computerized information or data such as articles, books, graphics and multimedia that can be searched to find information. They are large collections of machine-readable data that are maintained by commercial agencies and are accessed through communication lines. Many libraries subscribe to them for easy access and use of current information.

use of the Internet, librarians now use websites/portals as a means to facilitate access to specific internet and other digital resources. Zhou (2003) defined web portal as a doorway that can be customized by individual users to automatically filter information from the web. Similarly, Lakos (2004) defined portals as a customized learning and transactional web environment, designed purposely to enable an individual end user "personalize" the content and look of the website for his/her own individual preference. According to Lisu (cited in Gbaje, 2007) some of the benefits of a library portal include promoting the resources held by the library, improving navigation of library resources; improving access to scholarly and educational web-based resources; providing more efficient access to e-resources; etc.

3.1 Opportunities and Advantages of Web-Based Services

Several opportunities and advantages abound in migrating library and information services to web-based format. Some of them are hereunder listed:

- By designing clearly organized, easily accessible sites, librarians can extend the traditional librarianship to the use of information technology and seize a leadership role in both fields;
- E-mail services can be used for delivering information to the users and communicating with fellow information professionals;
- Books and journals can be ordered online, technical processing of the documents too can be done without much efforts;
- Access to various databases and OPAC of other libraries located in remote areas can be provided;
- Electronic Selective Dissemination of Information (E-SDI) can be used for delivering information to users (Singh, 2001)

Singh (2001) observed that with the help of web-based library service, users are attended round the clock. The Internet provides links to various library sites, specializing in almost every topic and they can be accessed directly from any part of the world. As libraries are going web-based, more and more libraries are becoming accessible via libraries' web pages. With an internet connection, a student in any University can browse through the documents in computers of other libraries in the world.

4.1 Challenges of Migrating to Web-Based Library Services

While the new technologies have added value to library services by presenting new modes of collecting, storing, retrieving and providing information, they have also brought new challenges and aggravated some of the challenges that faced libraries before. These challenges relate to the following areas listed and discussed below:

i. Lack of Sufficient Monetary Allocation/ Poor Funding

Libraries require sufficient funds to acquire modern facilities for web-based services. Such facilities like computers, servers, scanners, photocopiers, software as well as paying for online services such as e-journals and other related services all require huge sums of money. Though many users can connect to the web without charge through their institutions, significant funds have already been committed to building and maintaining the infrastructure and purchasing the necessary hardware and software. Most of these facilities and services are very expensive and can be purchased from developed countries.

ii. Lack of Basic Infrastructure

The problem of poor infrastructural facilities have been the major cause of setback in migrating library services to web-based

format. Government should therefore provide enabling environment that would allow donor agencies to provide investors particularly those in information sector to take full advantage of recent advances in information technology to bring our libraries up-to-date (Afolabi and Adiboye, n.d.)

iii. Low Bandwidth

Bandwidth is defined by Emmanuel and Sife (2008) as the amount of information that can be carried in a given time period (usually a second) over a wired or wireless communication link, expressed as bits per second (bps). The higher the bandwidth, the more data can be transferred in bits per second. Whenever there is low bandwidth, that is, when there are few data transferred in bits per second, users get frustrated as it takes long to retrieve information from the internet. Bhattacharya, (n.d.) observed that increased use of network for transferring data by more people would increase the load on network traffic. This is further compounded by the size of data transferred if it includes full-text multimedia document. Simple text documents takes up only a small amount of space, pictures and graphics take up more, video and sound files are really hungry for space demanding much more space transmission time. Successful migration and implementation of web-based library services would, therefore, require increased bandwidth, speed and accessibility so as to serve patron's need in a minimum period of time.

iv. Unreliable Power Supply

Web-based resources and services rely on electricity for their functioning. Epileptic power supply is a persistent problem for libraries in especially developing countries like ours. Even when libraries provide backup generators in order to combat the problem of unreliable power supply, the problem of no funds for fuelling the generators arises. This

can be frustrating to the migration process.

v. Lack of Skilled Professionals

Many librarians lack the basic skills for effective management and implementation of web-based library services. The use of ICT according to Afolabi and Abidoye, (n.d.) is easier for younger librarians. Older librarians find it difficult or are afraid to use some of these newer technologies, that is, technophobia.

vi. Lack of Information Literacy among Library Users

Many library users are not skilled to effectively use the rapidly growing and changing information resources. Information literacy as defined by American Library Association (1989) is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information". Lack of information literacy skill has been pointed out as one of the major causes of underutilization of electronic information resources in many African libraries (Emmanuel and Sife, 2008). Many electronic information resources like CD-ROMs, e-journals, and online databases available in the library are underutilized due to lack of information literacy skills by many users of the library. This results in their usual complaint that there are no relevant information in the library to meet their needs.

vii. Frequent Changes in Technology

Frequent changes in technology, software upgrading leads to total overhauling of the existing system (Afolabi and Abidoye, n.d.). Change, especially in technology is extremely costly. It requires large investment in planning, training, designing, development, new maintenance and administration and carries high software and hardware costs.

viii. Maintenance Issues

Frequent maintenance of facilities for web-based library services is crucial to sustainability of such services. It is imperative that there are qualified technical personnel for managing and maintaining web-based resources and services that the library runs. However, many libraries have inadequate qualified technical manpower in the area of ICT generally. Consequently, faulty equipment are abandoned in some libraries because there is no knowledgeable staff to repair them.

5.1 Recommendations to Strengthen and Improve Web-Based Library Services

Despite the challenges faced by libraries in migrating their services to web-based format, librarians and authorities in various institutions must find means of making the facilities and resources discussed in this paper available to their users through the web technology. Therefore the following suggestions/recommendations are made:

- Adequate funds should be provided by the government and all stakeholders in education sector. This is necessary to enable libraries to acquire, procure and maintain all necessary infrastructure/ equipment that can improve the quality of their services.
- To effectively tackle the problem of unskilled professional staff, more training opportunities should be provided for the library staff such as workshops, seminars and conferences on web-based library resources and services, training on software management, maintenance of server and database management. Training will afford librarians the opportunity to acquire skills needed to perform their duty efficiently.
- Every effort should be made on a consistent basis to update the library websites frequently. This will certainly entice users to library websites and then to

the library resources and web-based library services (Madhusudhan and Nagabhushanam, 2012).

- Libraries in their relentless efforts to provide qualitative service should create avenue where users who do not have the knowledge of the use of web-based resources and services (or may not even be ICT compliant), can be trained so as to develop the necessary skills on how to exploit the information resources available for them on the web.
- Librarians need to effectively publicise their websites through forums that the users pay particular attention to. Newsletters and electronic discussion groups like the Bulletin Board may be used for this purpose.

Conclusion

A web-based library service is a trend and has become an important tool for libraries. As libraries actively transfer or change their services to blend with new trends and innovations, the central purpose remains to serve and teach users to find, evaluate and use information effectively. Library users are very happy when getting library services through the web. By using web-based services, libraries provide new and interesting resources to their user communities to continue to do what libraries have always done in the past, which is, bringing order out of chaos and making information readily available.

Much has been said on the opportunities/advantages/potentials of web-based library services but its implementation is yet to fully come into reality. There is no infrastructure at all, especially in developing countries like ours to implement web-based library services. I hope someday libraries will be able to overcome these problems/ challenges of migrating to web-based library services. Though the initial cost of installation

is considerably high but if libraries are able to provide web-based information services, they will not only become popular but will also have the potential of becoming money making self earning organisations.

References

Afolabi, A.F. and Abidoye, J.A. (n.d.). The Integration of Information and Communication Technology in Library Operations Towards Effective Library Services. *Proceedings of the 1ˢᵗ International Technology, Education and Environment Conference (c)African Society for Scientific Research (ASSR)* http://www.hrmars.com/admin/pics/267.pdf. Sourced on (18/05/2018).

ALA Glossary of Library and Information Science (1983). American Library Association, London

American Library Association (1989). *Presidential Committee on Information Literacy*. Final Report. Chicago: American Library Association . Sourced (on 20/05/2018).

Bhatnagar, A. (2005). Web-Based Library Services. http://ir.inflibnet.ac.in/bitstream/1944/1418/1/58.pdf Sourced on (15/04/2018).

Bhattacharya, P. (n.d.). Digital Information Services: Challenges and Opportunities. *members.tripod.com/siddiquee_q/DigitalInformationServices.pdf* Sourced on (20/05/2018)

Borasky, Danielle (1999). Analysis of Web-Based Library Services: A master Paper. http://cdr.lib.unc.edu/...uuid:54675141-c530 Sourced on (20/04/2018).

Emmanuel, G. & Sife, A. S. (2008). Challenges of Managing Information and Communication Technologies for Education: Experience from Sokoine University of Agriculture, Tanzania. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*4(3).

Gbaje, E.S. (2007). Provision of Online Information Services in Nigerian Academic Libraries. *Nigerian Libraries*: *Journal of Nigerian Library Association* 40, 1-4.

Hatua, R. S. (n.d.) Web-Based Library and Information Services. Sourced on (20/04/2018)

Imeremba, D.U. (2005). *Information Technology: Products and Services in a Cyber Culture*. Enugu: John Jacob's Classic

Lakos, A. (2004). Portals in Libraries: Portal Vision. *Bulletin of the American Society for Information Science and Technology* 31(1). http://www.asis.org/Bulletin/oct-04/Lakos2.html Sourced on (15/04/2018).

Madhusudhan, M. and Nagabhushanam, V. (2012). Use of Web-Based Library Services in Select University Libraries in India: A Study. *International Journal of Library and Information Studies* 2(1).

Madu, E.C. (2008). *Fundamentals of Modern Reference Services: Manual versus Electronic*. Ibadan: Evi-Coleman

Murugan, S. (2013). User Education: Academic Libraries. *International Journal of Information Technology and Library Research* 1(1)

Pathak, S.K., Mishra, S.A. and Sahoo, G. (2008). Future of Web-Based Library and Information Services: an Indian Scenario. http:www.ir.in flibnet .ac.in/**bitstream**/1944/1156/1/36.pdf Sourced (on 17/05/2018).

Pathak, S.K., Sahu, H. and Pathak, S.S. (2010). Importance of Web-Based Library Services: An Idian Scenario. *Library and Information Services in Astronomy VI*. http://adsabs.harvard. edu/abs/2010ASPC..433..343p. Sourced (on 17/05/2018).

Singh, N. (2001). Internet: Importance and

Usage for Library and Information Professionals. *DESIDOC Bulletin of Information Technology* 21(3). http://www.Publications.drdo.gov.in/oj s/index.php/djlit/article/view/3542 Sourced on (17/05/2018).

Syed, S. A.(2002). Managing Change to Enhance Web-Based Services in the Arabian Gulf Libraries. *Online Information Review* 26(4) www.emeraldinsight.com/doi/pdf/10./ Sourced on (17/05/2018)

Zhou, J. (2003). A History of Web Portals and their Development in Libraries. *Information Technologies in Libraries,* Vol. 22