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# Bridging the information gap with the patrons in university libraries in Africa

## 30 --- The case for investments in web 2.0 systems

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### Abstract

**Purpose** – The purpose of this paper is to examine and demonstrate the extent to which university libraries in Africa are bridging the information gap through the use of web 2.0 systems, including challenges and prospects.

**Design/methodology/approach** – The review adopted a combination of various data collection methods and approaches, including current academic literature, document analysis, desk review guides and reports on university libraries.

**Findings** – Review results indicate that few university libraries in Africa have embraced the use and application of web 2.0 systems. It is regrettable that web 2.0 is not new in libraries, although many African university libraries have not adopted the concept. Web 2.0 systems, including blog, delicious, YouTube and Facebook among others, are no longer a preserve of commercial organizations.

**Research limitations/implications** – The review involved university libraries in Africa because of their perceived role in creation, management, preservation, transmission or diffusion and utilization of information and knowledge. University libraries provide information services to support research, teaching, learning, and community activities of respective universities.

**Practical implications** – University libraries in African countries face various challenges in implementation of web 2.0 systems. Web 2.0 systems have proved to be useful in addressing issues and challenges of open, distance and e-learning programmes. Information professionals should support implementation and use of relevant web 2.0 systems.

**Social implications** – Across the globe, university libraries are increasingly using web 2.0 systems to support, promote and extend information services to their patrons. In the modern information world 2.0, it is important for university libraries to identify relevant web 2.0 systems and integrate them into mainstream library and information services.

**Originality/value** – The review provides useful insights regarding the use and application of web 2.0 systems in university libraries in Africa.

**Keywords** Africa, University libraries, Web 2.0, Social networks, Communication technologies, Information gap

**Paper type** Research paper

### Introduction

In the information environment, the paradigm shift or transition from the industrial age to the knowledge age has brought with it new technological innovations – web 2.0 systems to provide, support, promote and extend information services to the patrons or user community. This development affects university libraries because of their perceived role in creation, management, diffusion and utilization of information and knowledge. Information and knowledge is the primary asset in all aspects of university libraries. Academic needs and success in universities depend upon timely and relevant



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access to information, knowledge and communication services. In the modern knowledge and learning environments, it is important for university libraries to integrate web 2.0 systems into mainstream library and information services. The emphasis is for university libraries to provide quality services as the vital part of the competitive strategy to stay on top of information business, and serve the needs and demands of the patrons. Web 2.0 systems help information professionals to enhance and increase opportunities to promote and extend information services to the patrons for educational and academic purposes.

In the recent times, the concept of web 2.0 has gained immense prominence in many library and information establishments. In particular, web 2.0 plays key roles in dispensation of information, knowledge and communication services in university libraries. Munatsi (2010) views web 2.0 as the use of social media software tools in the library and information environment. Similarly, web 2.0 concentrates on the common applications or services such as blogs, wikis, multimedia sharing services, social networking, content syndication, podcasting and content tagging services, built using the building blocks of the technologies and open standards that underpin the internet and the web (Anderson, 2007). These definitions indicate that web 2.0 implies to second generation of internet and web based services that includes social networking sites (SNS, such as Facebook, YouTube, MySpace, Flickr, Twitter, wiki, blogs, bookmarking or favorites, federated searching, chat and instant messaging (IM)) and communication and support systems (like online help desk) that enables online collaboration, participation and sharing among information professionals and patrons. In contrast, web 1.0 took people to information, while the development and use of web 2.0 technologies aims at taking information to the people (Davis, 2005).

In the modern information environment, web 2.0 services are increasingly becoming necessary components in university libraries. Technological developments including web technology have emerged creating more friendly, social and fun environments for retrieving and sharing of information (Sadeh, 2007). Web 2.0 systems are affecting library and information establishments including information professionals and patrons. In the USA, academic libraries have leveraged the power of web 2.0 systems to provide better and more relevant services to the patrons (McManus, 2009). McManus maintains that the implementation of web based services have huge implications on the present and future information environments. University libraries need to connect with the user community by adopting and integrating use of web 2.0 systems in delivery and support of information services. University libraries as centres of excellence should adopt, implement and integrate relevant web 2.0 services that fulfill the needs, demands, desires and wisdom of the patrons. McManus's (2009, p. 2 of 10) view states that, "web 2.0 services are becoming part of library patron primary activities online when accessing information and libraries need to stay vital to their patrons by using these same services".

Across the globe, research results indicate that academic libraries are actively involved in the use of web 2.0 systems as a means of promoting and extending library and information services to the patrons. Charnigo and Barnett-Ellis's (2007) study on "Facebook among US academic librarians" provide useful insights that reveal academic librarians have been using Facebook as a tool in delivering library and information services to the patrons. In the UK, university libraries have effectively risen to the web 2.0 challenges and increased the quality of web based services to the patrons.

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In Australia, at least two-thirds of university libraries use one or more web 2.0 technologies such as really simple syndication (RSS), blog, IM and podcast (Linh, 2008). "RSS has been one of the most widely utilized technologies in Australian university libraries as it enables users to create a one-stop-shop of information" (Stephens, 2006, p. 641). A similar study on "web 2.0 applications in top Chinese university libraries", found out that more than two-thirds of the 38 top Chinese university libraries apply one or more kinds of web 2.0 tools. Catalog 2.0 and RSS are widely used, while IM, blog, SNS and wiki applied less (Han and Liu, 2010).

In Africa, university libraries are still struggling with the concept of web 2.0 systems. The development of web 2.0 services in university libraries in Africa has been very slow and unplanned. In South Africa, university libraries of University of Pretoria, University of Johannesburg, University of Western Cape, Witswatersrand and University of South Africa have made frantic efforts to use web 2.0 services (Munatsi, 2010). The above discussion underpins the need for university libraries to bridge the information gap with the view to suit the needs and demands of the patrons in the twenty-first century and beyond. University libraries are excellent centres of information, knowledge and communication services with core responsibilities and duties of providing quality services to the patrons. This makes it quite necessary for university libraries in the African context to engage in investments in web 2.0 systems in order to promote and extend services to the patrons. In the modern knowledge and learning environments, university libraries have to be technology-reliant and compliant.

## Literature review

### *Web 2.0 systems*

Technological developments have fundamentally transformed the information environment in university libraries. Libraries have to develop, implement and integrate advanced technological systems in order to manage and handle information work and activities effectively and efficiently. The twenty-first century has witnessed rapid use of information and communication technologies (ICTs) in all aspects of information work and activities in university libraries. The present paradigm of information services indicates that library 2.0, web 2.0 and social media are relatively new concepts in university libraries. Application and use of web 2.0 systems in developed countries such as USA, UK and Australia have shown the need for university libraries in developing countries to join the social networking movement. The review indicates that, very few university libraries in Africa especially in South Africa have embraced the use of web 2.0 services so as to support, promote and extend information services to the patrons.

Historically, web 2.0 systems have been strongly applied in the field of e-commerce, online advertising and related services, and less in the library community (Linh, 2008; Maness, 2006a). Web 2.0 systems are recent technological innovations that have emerged as second generation of internet and web based technologies for online collaboration, participation, communication and sharing of information and knowledge involving information professionals and patrons. Modern information web 2.0 services such as blog, wiki, RSS, bookmarking, delicious, libraryThing and portal services (YouTube, MySpace, Facebook, Meebo and Flickr), podcast, bookmarking or favorites, federated searching, chat, IM and online help desk are some of the identified systems that need to be integrated and implemented in university libraries. Web 2.0 systems are a social

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movement for taking information to the people (Birdsall, 2007; Davis, 2005). Today, university libraries across the globe are deploying web 2.0 systems so as to promote and extend information services to the patrons.

The concept of library 2.0 is deeply rooted in the use and application of web 2.0 systems. Library 2.0 is essentially a mash-up of traditional library services that includes integration of innovative web 2.0 features in web based services (Harinarayana and Raju, 2010). In Maness's (2006b) views library 2.0 is the application of interactive, collaborative and multimedia web based technologies to web based library services and collections. This is made possible through the development and use of web 2.0 technologies in information work and activities. In view of the foregoing discussion, library 2.0 implies modern information management practices made possible through the development and use of web 2.0 systems. In this respect, delivery and provision of information services to the patrons is done using web 2.0 systems. Library 2.0 implies open management and development of library and information services through participation with the patrons and other stakeholders. The services are constantly updated and evaluated to best serve the needs, demands, desires and wisdom of the user population. Web 2.0 systems provide two-way communication services between the information professionals and the patrons. The university library can use web 2.0 systems to enable online creation, collaboration, sharing and communication of services with the patrons and the wider academic community.

#### *Prospects or opportunities of web 2.0 systems in university libraries*

In the modern information environment, university libraries exist in highly dynamic, chaotic information environment characterized by changes that reach across the globe (Allard, 2009). In this environment, information services depend entirely upon technological innovations. In this respect, understanding web 2.0 systems is essential if university libraries and information professionals are to provide and support quality services to the patrons. As a platform for collaboration and increased internet community and because of its decentralized structure, web 2.0 further emphasizes the librarian's role as a guide to information rather than the traditional role of an information keeper (McManus, 2009). Web 2.0 technologies allow libraries the opportunity to provide outreach activities, customize online and create innovative services for the patrons (Bradley, 2007). These technologies allow online communication, collaboration and sharing of information services with the patrons. Web 2.0 systems involves a wide range of applications and tools such as RSS, blog, wiki, bookmarking, delicious, libraryThing and portal services (Harinarayana and Raju, 2010; Munatsi, 2010):

- RSS is the method of sharing and broadcasting content such as blog entries, news headlines and podcasts in a standardized XML format.
- Blogs are personal diaries that are organized in reverse chronological order. Among the web technologies, blog is the most widely or frequently used tools.
- Wiki is among web 2.0 technologies dominating the information industry as a collaborative web site for adding, removing or editing the available content or information.
- Podcast refers to multimedia broadcast hosted on a web site and allows users to download the audio or video files and view or hear either on a computer, MP3 player or video output.

- IM is a live online communication that facilitates online interaction involving two people.
- SNS are popular social media or software platforms (YouTube, MySpace, Facebook, Twitter and Flickr) for online collaboration, communication and sharing of information among users. SNS provides the ground work for librarians to interact with the patrons.
- Bookmarking or tagging is the method of storing individual web pages or locations in the computer. The method is also used for internet users to access, search, organize, store, and manage web pages on the net.

The above applications of web 2.0 systems are the relevant and right tools to use in university libraries. The modern information world 2.0 (library 2.0, web 2.0 and social media) provides the necessary platform that helps information professionals to take services to where the patrons and researchers are. Social media also provide patrons with the opportunity to be actively involved in information practices through online collaboration, communication and sharing of information and knowledge. Web 2.0 systems have helped to bridge, expand and promote information services to the patrons in university libraries. Other prospects or opportunities of web 2.0 systems in university libraries include promoting knowledge society, supporting open, distance and e-learning, promoting online collaboration, communication and sharing, marketing of information services and positioning of university libraries in the twenty-first century.

#### *Promoting knowledge society*

In the modern information environment, knowledge has emerged as the basic and primary asset necessary for societal needs and demands. Knowledge is the commodity that has a market value that determines the success and failure of a society. Bridging the information gap in university libraries implies putting in place effective systems to provide quality services to the patrons. Library 2.0 and web 2.0 systems provide seamless services to the patrons through media-rich systems such as blog, wiki and social network. Web 2.0 systems also help to increase reliance on access and use of information or knowledge essential in achieving the millennium development goals. Web 2.0 increases the amount of information available, increases the speed with which information is growing, and provides the ability to capture more human knowledge by enabling user-generated content and browser based software that facilitates online collaboration, communication and sharing of information (Allard, 2009). The author adds that, web 2.0 has the capability to address generational perspectives because it allows for users to have different experiences based on personal skills and values. This implies that university libraries should proactively provide and support information work and activities through content creation, organization and management of knowledge and intellectual records. The challenge is for the university libraries to effectively apply web 2.0 systems in achieving the educational and academic goals not only in the universities, but also the society at large. Munatsi (2010) opines that, social networking allows sharing of content through collaboration and communication, and creation of online communities. Web 2.0 makes the contribution of content and interacting with other people faster, easier and information is made more accessible to a wider population.

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*Promoting and extending information services*

Development and implementation of web 2.0 services have helped university libraries to provide, expand, promote, support and post information services to the patrons. Blogs that are managed and maintained by university libraries provide regular entries of information, knowledge and communication services to the patrons. In addition, blogs are used to communicate library events, publicize information resources, train staff, and offer subject-related reference services (Han and Liu, 2010):

Library web sites as information dissemination spaces have leveraged this medium to provide information services to their users and to act as a library promotional mechanism. Comments suggest that blogs are the best informal communication channel to extract latent feedback information from the users to enhance the quality of library services (Harinarayana and Raju, 2010, p. 76).

Weblog or blog are widely used in providing information reference services in academic libraries. Weblog and RSS are useful in gathering and collecting content from different information sources (Bradley, 2007). RSS is also one of the web 2.0 technologies that interest researchers (Linh, 2008):

Currently the University of Pretoria uses web 2.0 applications like RSS feeds from the catalog, book covers sourced from Amazon.com integrated with the catalog, email notification via FeedBlitz when the library's web page is updated, blogs and wikis as communication tools, and a list of web tools on the library's web page as a reference for users (Munatsi, 2010, p. 255).

University libraries can also promote and extend information services to the patrons through use of podcast or other systems. Libraries of Imperial College London, Johns Hopkins University and Cornell University mainly use podcasts for providing information about library tours, library updates and news (Harinarayana and Raju, 2010). "By combining RSS feed readers and podcasts, libraries can access and deliver audio commentary and instructions to patrons wherever they are located" (King and Brown, 2009, p. 13). The podcasts have given the user community the opportunity to listen to recorded intellectual outputs online without any additional software and to download for later use. These tools have proved to be useful in expanding, promoting and posting digital and web based information services to the patrons. Indeed, this has helped information professionals to take information services to where the patrons are.

*Supporting open, distance and e-learning*

Across the globe, university libraries are making concerted efforts to use web 2.0 applications in order to address the information needs, demands, desires and wisdom of students in open, distance and e-learning programmes. University of South Africa is considering the use of web 2.0 systems so as to promote and extend library and information services to the open and distance library users (Munatsi, 2010, p. 255). IM services are widely used to provide virtual reference services in academic libraries (Foley, 2002). Wiki application provides the platform for information professionals and patrons to access, share and exchange information and knowledge. Wiki also allows users to collaborate in content generation and ultimately develop an enduring knowledge base or repository on a given discipline (Munatsi, 2010).

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*Promoting online collaboration, communication and sharing*

Both IM and SNS are popular in higher institutions of learning for online collaboration, communication and sharing among users. IM is widely used in academic libraries especially in reference services. IM provides not only text messages, but also multimedia resources such as photos and videos among others (Harinarayana and Raju, 2010). The technology provides the preferred method for online collaboration, communication and sharing among librarians and patrons as exemplified at George Washington University library. This allows patrons remote access to the librarians while conducting information research (McManus, 2009). IM helps the patrons to easily and quickly get in touch with the librarian for possible assistance. In turn, the librarian provides feedback to the patrons via the IM system. Moreover:

[...] instant messaging provides faster access to information in most cases, allows both parties to see the reference related questions, and having this service available to patrons gives an academic library's reference services the ability to have a constant presence on their web site and within their patron's chat software, if the patron chooses to add the reference services to their address book (Bradley, 2007, p. 137).

Delicious are podcasting and bookmarking that indicate areas of interesting links for later use and sharing with friends. Delicious also helps to create a network of friends who can share links and discover new articles and resources (Munatsi, 2010). LibraryThing is a social network for cataloguing and sharing of information resources and services among library and information professionals. University libraries at Imperial College of London, University of Michigan, University of Texas, University of Washington, University of Pennsylvania and University of Western Australia all allow the users to bookmark and share library web sites (Harinarayana and Raju, 2010), adding that, the University of Texas allows searching of the library catalog within the Facebook web interface, the University of Adelaide library uses Facebook to automatically inform fans when new information is added to the web site, and Rice University library web site has created a book club at goodreads ([www.goodreads.com](http://www.goodreads.com)) SNS.

*Marketing of information services*

Web 2.0 has become a popular and trendy marketing concept (Harinarayana and Raju, 2010). Use of web 2.0 tools (IM, RSS and Facebook) helps university libraries to market and promote information services to the patrons. This implies the process of taking information services to where the patrons are vis-à-vis coming to the libraries. Chinese top university libraries utilize RSS for various purposes (Han and Liu, 2010). First and basic one is the notification of information of interest to patrons that are initiated by libraries such as library news and events, new books available, or database information mainly for publicizing library events, accessing library resources, providing reference services and sharing photos. The second and most demanding function is the notification of personal information produced by patrons' utilization of library services such as the circulation record. The third purpose is the syndication of subject related information for easy and timely access by the patrons. Fourth and most popular is the publicizing of library events.

*Positioning of university libraries in the twenty-first century*

Globally, the use of web 2.0 systems is redefining the role of university libraries through technological and social engagement. In African countries, few university

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libraries are involved and engaged in social networking services. Outside the library environment, library and information professionals are actively using web 2.0 services such as IM, Facebook, Twitter and podcast. These are the most widely used web 2.0 applications among information professionals for purposes not directly related to information work and activities. Interestingly, it seems that university libraries in Africa have a long way to go in integrating the use of web 2.0 systems. It is regrettable that library 2.0 and web 2.0 systems not quite new dispensation in the information environment have not been overly embraced in a good number of African academic and research universities libraries (Munatsi, 2010). The overall picture of web 2.0 systems use and application in university libraries in Africa is at its lowest level as compared to developments in other parts of the world. In Africa, university libraries in South Africa have made good progress towards the use of web 2.0 tools, although many are yet to realize the new dispensation. In particular, this demonstrates that university libraries and information professionals in Africa need to accept the reality of modern information world 2.0 systems in order to bridge the information gap with the patrons.

#### *Implementation challenges and strategies*

The modern information world 2.0 depends upon technological innovations and applications in order to provide, promote and support information services to the patrons. Information professionals have to make honest and sincere strategies or efforts to adopt and implement web 2.0 systems. Many challenges have made the introduction of web 2.0 systems difficult to achieve in university libraries in Africa. Potential challenges militating or inhibiting the introduction of web 2.0 systems in academic and research libraries as suggested by Munatsi (2010) include lack of resources, traditional management practices, poor planning initiatives, lack of patron focus, intellectual property rights, lack of ICTs knowledge and skills, and security concerns.

The major problem facing university libraries in Africa in developing and implementing web 2.0 systems is lack of enough resources including human personnel and capital. This is mainly because in developing countries the cost of technological and communication infrastructure far exceeds budgets allocated for library and information systems (Yu, 2008; Madhusudhan, 2010). The economic meltdown affects university libraries in Africa to the extent that new and innovative technologies such as web 2.0 systems are given minimal attention. Another problem is poor planning initiatives in university library and information establishments. Library and information professionals in African academic and research libraries have not taken the right initiatives and strategies to develop, implement and integrate relevant web 2.0 tools or services (Munatsi, 2010).

In the present highly dynamic and versatile information environment, university libraries in Africa still maintain the old traditional practices of managing and handling information services instead of modern methods. In addition, most of these libraries are still struggling with the dream of realizing full automation of information services. In traditional libraries, the librarian manages the information services with little participation from the user population. Library 2.0 is the process of managing and handling information services through participation of the patrons (lecturers, non-academic staff, community and friends of the library). This creates a two-way online collaboration, communication and sharing of information between the library



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staff and the patrons. This total quality management system provides both top-down and bottom-up interaction in library and information centers (Green, 2010). Transition to library 2.0 requires web 2.0 systems.

There is also the problem of university libraries not paying close attention to the patrons. Information professionals normally assume that patrons will naturally use information services no matter what happens. As a result, approaches that might address issues affecting the patrons are not given any attention at all. In the twenty-first century, university libraries are supposed to go to where the patrons are through use of innovative approaches such as web 2.0 systems. University libraries have to put in place smart technological systems to help patrons access and use information and research services via web based and digital resources. Additionally, university libraries should match the modern information requirements with technological needs and demands of the patrons. There has to be a paradigm shift in library and information systems towards the patrons. "African academic and research libraries should urge user involvement and feedback in the development and maintaining of library services" (Munatsi, 2010, p. 255). This is achieved through various initiatives including integration of web 2.0 systems.

Information professionals also lack relevant knowledge, competencies and skills useful in implementing web 2.0 systems. University libraries and information professionals have not really provided the necessary essential leadership skills needed in ICTs information work and activities. Information professionals should always advocate the use of technological innovations in library and information services. University libraries should develop the necessary information infrastructure to provide the required platform for implementing web 2.0 systems. Above all, sincere efforts and support are necessary from all players in the information industry – libraries, information professionals, parent organizations and sponsors in order to achieve technological success.

## **Conclusion and recommendations**

### *Conclusion*

The concept of web 2.0 includes various types of technologies that can be used to promote and enhance information services to the patrons in university libraries. Web 2.0 systems are fundamental technologies that are needed by the millennial generation in the knowledge economy of the twenty-first century and beyond. In general, the young generation has greater expertise in the use of web 2.0 technologies. Particularly, web 2.0 occupies prominent place in the discourse of information, knowledge and communication services in university libraries. The literature shows that the application and use of web 2.0 systems in university libraries in Africa is indeed in its lowest level. This is a worrying trend in the continent given the supreme role of university libraries and information professionals in educational and academic matters. In addition, integration of web 2.0 systems into mainstream library services is hampered by myriad problems including inadequate financial resources, poor information infrastructure, and lack of support and funding from the universities. With rapid developments in knowledge and learning environments, it is important for information professionals to rethink the role of university libraries in line with the needs and demands of the patrons. Going by the general usage of these technologies outside the library world, one can confidently say that these technologies will

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be accepted by the library users without much inhibition (Harinarayana and Raju, 2010, p. 86). University libraries and information professionals should join the technological club in order to be compliant with modern information world 2.0 requirements. Web 2.0 solutions cannot be divorced from the profile of university libraries. University libraries are rapidly changing and information professionals should acquire the right mix of web 2.0 systems to effectively and efficiently manage and handle information services.

### *Recommendations*

Universities should provide enough financial resources and funding to develop and support information infrastructure in the libraries. In addition, information professionals should train and acquire technological competencies and skills necessary for development and implementation of web 2.0 systems. Developing intensive modern web 2.0 systems needs huge investment and commitment from the parent organization. Globally, funding has always been the biggest single hurdle facing university library and information establishments.

University libraries need not reinvent the information wheel. Instead, it is important to identify aggressively relevant web 2.0 systems and integrate them into mainstream library and information services. Information professionals should identify the needs and demands of the patrons and match them with the right technological requirements.

The concept of web 2.0 systems should be embraced with the view to provide quality services to the patrons. Information professionals need to understand the significance of web 2.0 systems and make sincere efforts to transform university library and information systems into modern knowledge hubs and knowledgebase nets. Additionally, information professionals ought to engage the patrons in open management practices with the aim to improve provision and delivery of services to the patrons.

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