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Stanley Efe Okolo

stanleyokolo45@yahoo.com

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# Web 2.0 for Reference Services: An Overview

Okolo Efe Stanley (CLN)

Collection Development Librarian :Rode Cecil Library  
Michael and Cecilia Ibru University, Agbarha-Otor, Delta State.

Email: [stanleyokolo45@yahoo.com](mailto:stanleyokolo45@yahoo.com), [okolostnl@gmail.com](mailto:okolostnl@gmail.com)

Phone: 07061264762, 07014516311.

## Abstract

*This paper examines what the concept of web 2.0 is all about and its attributes by using an acronym SLATES to explain what web 2.0 entails and they are as follows: Search: this is the ease of finding information through keyword search which makes the platform valuable Links: guides to important pieces of information. The best pages are the most frequently linked to. Authoring: the ability to create constantly updating content over a platform that is shifted from being the creation of a few to being the constantly updated, interlinked work. In Wikis, the content is iterative in the sense that the people undo and redo each other's work. In blogs, content is cumulative in that posts and comments of individuals are accumulated over time. Tags: categorization of content by creating tags that are simple, one-word descriptions to facilitate searching and avoid rigid, pre-made categories. Extensions: automation of some of the work and pattern matching by using algorithms e.g. amazon.com recommendations. Signals: the use of RSS (Really Simple Syndication) technology to notify users with any changes of the content by sending e-mails to them." The various web 2.0 tools such as social networks, wiki, blogs, microblogging etc. it also talks about the application of these tools in the provision of effective and efficient reference services. The paper also addresses the effects of web 2.0 application on library and information professionals and the library users. The constraints to the application of web 2.0 for reference services.*

**Keywords:** Reference Services, Web 2.0, Attributes of Web 2.0, Web 2.0 tools, Effects of Web 2.0.

## Introduction

The field of librarianship is all about reference services, this is so because librarians are trained to specifically render assistance to library users because they (users) usually have challenges on how to locate information resources. The term reference service is all about the act of guiding library clientele on how to access information resources. Reference service as a concept has

been defined severally by different scholars in the field of librarianship. However, a reference service is seen as the personal assistance provided to the users and potential users of information (Bunge in Bhatia and Vohra 2007). Gbaje (2007) noted that reference service is a platform where human intermediation occurs in a face-to-face modes and users express their information problems (or what they know about them) to intermediaries. Giving out this personalized information service has been the main aim of library and information profession.

In another definition Madu (2010) defined it as the personal assistance eagerly given to library users in pursuit of information by a librarian working in the reference section. In the world of library, users are essential factor that needs to be given greater consideration and in doing this; librarians need to be properly trained, retrained and educated on how to carry out the role of reference services effectively and efficiently to users. This is a unit of the library that cannot just be handled by anybody. Reason being that it involves responding to queries that will be thrown at the librarians by the library users and this exercise usually takes place in the four walls of the library where the library users will have to walk into the library asking a librarian on how to locate an information resources in the library and in doing this, the user may not be able to pass across whatever seems to be his or her intent clearly to the library staff and their body languages sometimes send messages that tend to upset the staff. Therefore, it's automatically behooves on the librarian to be patient and tolerable.

In the bid to overcome the fracas that usually takes place between a librarian and the library clientele and also to serve them effectively and efficiently; it's necessitated the application of Information and communication Technology in the provision of substantial and tangible services in the library. For the reference services provided by libraries to remain viable, they must continuously adapt to meet the ever-changing needs and reference preferences of their users. In

recent years, technological developments and their rapid adoption and widespread use by library users have only served to increase the pace of change required by reference services in order to remain effective. Indeed, with a growing amount of any academic library's collection now available digitally and the means to access these electronic resources off-site nearly ubiquitous among users, reference service has had to expand beyond the physical reference desk and into this virtual, electronic environment in order to continue to "meet" the users where they "are." Today, e-mail, web form questionnaires, chat, instant messaging, SMS/text messaging, and co-browsing capabilities represent just some of the ways that reference services have attempted to keep pace with the changing ways that library users seek information. To make this a reality, the technology termed web 2.0 becomes a necessity.

### **THE CONCEPT WEB 2.0**

Web 2.0 is the next incarnation of the World Wide Web, where digital tools allow users to create, change, and publish dynamic content of all kinds. Other Web 2.0 tools syndicate and aggregate this content.

The term 'Web 2.0' was coined by technology commentator Tim O'Reilly who tried to define it as follows: "Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an 'architecture of participation' and going beyond the page metaphor of Web 1.0 to deliver rich user experiences" (O'Reilly, 2005).

## ATTRIBUTES OF WEB 2.0

According to Andrew McAfee (2006) the following acronym SLATES is used to represent the attributes of web 2.0 websites which are:

1. **Search:** this is the ease of finding information through keyword search which makes the platform valuable
2. **Links:** guides to important pieces of information. The best pages are the most frequently linked to.
3. **Authoring:** the ability to create constantly updating content over a platform that is shifted from being the creation of a few to being the constantly updated, interlinked work. In Wikis, the content is iterative in the sense that the people undo and redo each other's work. In blogs, content is cumulative in that posts and comments of individuals are accumulated over time.
4. **Tags:** categorization of content by creating tags that are simple, one-word descriptions to facilitate searching and avoid rigid, pre-made categories.
5. **Extensions:** automation of some of the work and pattern matching by using algorithms e.g. amazon.com recommendations.
6. **Signals:** the use of RSS (Really Simple Syndication) technology to notify users with any changes of the content by sending e-mails to them."

## **WEB 2.0 TOOLS**

Prabhu Devika (2016) stated that there are web 2.0 tools which are regarded as communities where people interact, share knowledge and learn. The important and most popular communities or web 2.0 tools are:

1. Social Networks
2. Blogs
3. Micro Blogging
4. RSS and Aggregators
5. Video Sharing
6. Photo Sharing
7. Wiki
8. Podcast
9. Bookmarks
10. Virtual World
11. Content Rating

### **Social Networks**

Social networks are built upon a hypothesis that there exists a determinable networking structure of how people know each other. A social network thus can be formalized into a net structure comprising nodes and edges. Nodes represent individuals or organizations. Edges connecting nodes are called ties, which represent the relationships between the individuals and organizations.

According to Mazzocchi (2014) Social networks were devised mainly with the purpose of finding and putting in contact old friends, old schoolmates, relatives and people with similar interests. However, many authors suggested that libraries can use social networks for a variety of other purposes: to promote services, to instruct users, for the reference service, to allow users to propose the purchase of documents or provide a feedback to the library, to show photo galleries of library events, but above all libraries can use social networks to create a community of users who actively participate in the library profile page and that, through their contacts, can enlarge the whole of the contacts of the library inside the social network. Moreover, within the social network sites, such as in Facebook, it is possible to insert applications to search directly a library OPAC or other databases such as Worldcat or JSTOR .Other authors gave suggestions also about the most suitable communication style in a social network for a library that wants to attract and retain users.

Social networks sites (SNS) are web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. Examples are: Facebook, LinkedIn, Myspace and Twitter

## **Blogs**

This is a type of website maintained by an individual, wherein an individual can share thoughts, photos and videos about events and some cases where other people can comment on it. It is also a shared online journal where people share their personal knowledge and experience on various issues. Almost all the blogs have comment feature-enabled. There are many websites like, eblogger, blogger and google blog, etc

## **Micro Blogging**

These are SNS wherein the user can write short thoughts about 140 words and other people can follow the blogs. Twitter is most popular micro blogging SNS.

## **RSS and Aggregators**

These three letters RSS stand for– Really Simple Syndication. It is a family of web feed formats used to publish frequently updated works – such as blog entries, news headlines, audio, and video – in a standardized format. With this small RSS, the person can have updated real-time information.

## **Video Sharing**

YouTube is a good example of video sharing web 2.0 and again it is the most popular website wherein people can share video, download videos and comment on them. People share knowledge and experience via YouTube.

## **Photo Sharing**

Flickr is a website that is popular for photo sharing service and also to comment on photos.

## **Wiki**

Wiki is a website that allows the easy creation and editing of any number of interlinked web pages via a web browser using a simplified markup language. They are typically powered by wiki software and are often used to create collaborative websites, to power community websites, for personal note taking, in corporate intranets, and in knowledge management systems. Wiki can be used as a dictionary, knowledge bank, etc.

### **Podcast**

Podcasts are digital media files which may be audio or video that can be downloaded through web by I-pod and I-pod like devices using Internet service. There are websites available like podcasting- tools.com which provides podcasting services.

### **Bookmarks**

New web browsers have bookmarks options wherein users can bookmark their favorite websites so that it will be easy for them to access when necessary.

### **Virtual World**

This is a genre of online community that often takes the form of a computer-based simulated environment, through which users can interact with one another and use and create objects. This is a modern generation of websites which takes place computer-based simulation environment. The individual can create his own 'Avatar' and interact with anyone in 3D format in the particular environment. 'Second life' is the best example of Virtual World.

## **Content Rating**

The content rating can be done by anyone who is reading content and on the basis of the rating, validity and use of information can be decided by other Internet readers and users. There are many websites carrying lots of information which is good or bad. The content may be text, photos and videos. The content must be acceptable to the masses as any wrong content can make a negative impact on individuals, including small children. Internet is an interactive tool, with a lot of content provided by users through online forms and upload procedures. An Internet site that provides interactive services bears huge responsibility of adequate content moderation. If moderators think that an item is inappropriately rated as defined by the established guidelines, they should adjust the rating accordingly. Also, documented procedures should be applied whenever CRS restrictions are being breached, with exact set of measures towards non-obeying users.

## **APPLICATION OF WEB 2.0 TOOLS IN THE LIBRARY FOR ONLINE REFERENCE SERVICES**

This is the type of services that is rendered to library users under the platform of the Internet facility. Chandwani (n.d) noted that online reference services can be regarded as “the provision of reference services involving collaboration between the library users and reference librarian, in a computer based medium. These services uses various media which include e-mail, web forms, chat, video, voice over Internet protocol (VoIP) all of these are performed in an online environment. Online reference service is a site that offers reference information online. Users can ask questions and get answers anytime, anywhere online without having to go to a library or a reference desk.

The application of web 2.0 tools in the library for online reference services can be performed in two forms known as the asynchronous and synchronous.

### **Asynchronous**

This form of online reference services take place where there is a conversation between the reference librarian and the clientele and the response between the two parties is not always immediately. In this, there is a delay between the question being posed and the answer being given. Asynchronous online reference services generally take the form of;

- **E-mail:** this is an online reference services whereby a user sends a question or a request to the librarian or the reference section and the librarian sends answers back to the library user who is in need of help from the reference librarian.
- **Web forms:** this is a platform whereby users click on a button on a library's website, which pops up a form where questions can be typed in and other specific information.

### **Synchronous**

This is the other form of online reference service where conversation or transaction takes place in a real-time with almost immediate response to a query or request. Under this form of online reference service, the information seeker receives the answer to the question that is posed instantly. Carolyn (2012) noted that Synchronous transaction takes the form of chat reference using simple technologies, chat reference using web contact software, video conference.

According to Mohmed H. N (2009) stated below are some of the roles web 2.0 tools enables the reference service librarian to perform in providing assistance to the users or information seekers:

1. It serves as a platform where the users can file their concerns, queries and suggestions regarding the services and activities of the library
2. It can also be used for the collection development where the users request the resources
3. It can be used as a tool for marketing information as well as the library.
4. Wiki as web 2.0 tool can be used for social interaction and discussion among the librarians and users as well.
5. The reference service librarian or section can make use of web 2.0 tool in given an announcement of the availability of new books and other resources in a given subject area.
6. Web 2.0 tools serves as a means of promoting events organized in the library for library users
7. It serves as a tool for announcing the availability of new research and learning opportunities in various academic/research departments.
8. Web 2.0 helps in providing instant clarifications for the questions from users.
9. It helps in providing virtual reference services
10. Web 2.0 tools enables librarians and patrons not only to interact, but to share and change resources dynamically in an electronic medium.
11. It helps in building network among the interested group in discussion issues of common interest.
12. Reference service librarians can use web 2.0 tools to promote their services, record events and programs, educate patrons and staff and much more.
13. It also serves as a form of online discussions/meetings/chatting and a way for providing virtual reference services to the users.

14. Web 2.0 tools can be applied to the library management system for editing the subject headings from the user point of view and thereby enhancing the indexing and relevancy of the searches.

15. Libraries can use web 2.0 tools to create professional and social networking sites that facilitate meeting people, finding like minds, sharing content - uses ideas from harnessing the power of the crowd, network effect and individual production/user generated content.

### **THE EFFECTS OF WEB 2.0 ON LIBRARY AND INFORMATION PROFESSIONALS AND PATRONS**

The Web 2.0 tool allows libraries to help and to serve their users more efficiently and to reach a new audience. While the effects are touted by proponents of Web 2.0, there are also those who feel that web 2.0 tools will do more harm than good. Librarians and information professionals may start to feel uneasy about their own inability to keep up with the rapid changes in technology and they may start to feel that they are losing control of the environment in which they are training and supporting users. Similarly, Web 2.0 is a powerful resource that will allow our users to receive information from many sources, to be actively involved in creating content and generating knowledge, and to communicate with each other and spread ideas. These advantages bring with them certain risks, such as low quality of information, loss of data, security and legal issues. The table below shows the following positive and negative effects of Web 2.0 on librarians and information professionals as well as on users (Miranda, Gualtieri and Coccia, 2009)

**Table 1**  
**Effects of Web 2.0**

On	Positive Effects	Negative Effects
Librarians and Information Professionals	<ul style="list-style-type: none"> <li>• Collaboration –Customization</li> <li>• Communication – Knowledge</li> <li>• Sharing – Updating</li> <li>• Flexible tools – Speed</li> <li>• Reduction of costs – Training</li> <li>• Facilitates experimentation</li> </ul>	<ul style="list-style-type: none"> <li>• Too many different tools</li> <li>• Doubts over the reliability of Tool</li> <li>• Difficulties in standardization</li> <li>• Low level of security and privacy</li> <li>• Low level of cataloguing information</li> <li>• Doubts over the longevity of tools</li> <li>• Confidentiality concerns</li> <li>• Ownership of data issues</li> </ul>
Users	<ul style="list-style-type: none"> <li>• Requires little technical expertise</li> <li>• Reduction of costs</li> <li>• Flexibility</li> <li>• User involvement</li> <li>• Time saving</li> <li>• Reduces information overload</li> </ul>	<ul style="list-style-type: none"> <li>• Rumours</li> <li>• Security and legal issues</li> <li>• Dependence</li> <li>• Second-hand information</li> </ul>

### **CONSTRAINTS TO THE APPLICATION OF WEB 2.0 TOOLS FOR REFERENCE SERVICES**

Web 2.0 tools have become a thing almost everybody uses in the society of Nigeria but it has not really been made visible in libraries so that reference librarians can make use of them in rendering their services to patrons both within that is those that will be coming to their reference desk for help and outside the library that is, those that will be seeking for assistance from a remote area. Web 2.0 tools have not really been fully embraced by libraries due to some challenges or factors that hampers it effective utilization in meeting the needs of patrons. According to Ezeani (2012) the following factors were enumerated as some of the challenges that seem to affect the application of social networking media in library service delivery as follows:

Lack of Awareness; bandwidth problem; technophobia; lack of maintenance culture; unreliable power supply; lack of training of staff; government intervention; copyright issue. These challenges hinders most of the libraries from adopting and applying web 2.0 tools in the running the activities of the library. In similar vein Oloruntoyin and Adeyanju (2013) noted that there are myriad of problems that confronts the usage of technologies such as web 2.0 in developing countries such as Nigeria and they include: low tele-density; insufficient telecommunication infrastructures leading to congestion; unreliable network design; poor interconnectivity; insufficient human resources development; poor maintenance culture; vandalization of facilities; exorbitant/unjustifiable billings and poor recovery strategy. If a library is set to adopt web 2.0 in the running of the library's activities, the above factors could deprive them from applying them. Besides the above mentioned challenges, Qutab(2014) also noted some other challenges that poses problem to the effective utilization of technologies in the running of the various services found in the academic libraries. The challenges put forward by Qutab are: lack of funding; lack of trained staff; staff attitude towards ICT adoptability; administration/management attitude towards ICT adoption; lack of interest by library users; unavailability/slow Internet connection; unavailability of back up services i.e electricity/generator.

### **Conclusion**

For an effective and efficient reference services to be provided by information professionals in this era of technological and information explosion, there is every need for the adoption of web 2.0 tools in the running of the day to day activities of the library and at the same time it will enable the reference librarians to extend their services beyond the four walls of the library.

Web 2.0 is platform for collaboration and in this our contemporary time where virtually every human being is using it to interact either synchronously or asynchronously. It is expedient at this junction that the library should not be left out so as to be able to provide the needed assistance to

users since it has rightly been stated that the field of librarianship is all about helping library patrons on how to access information resources either in soft or hard copies.

With the help of web 2.0 tools, the barrier that usually takes place between librarian and library users on the area of not been able to express oneself, unapproachability of librarians is eradicated thereby bringing about smooth transaction between the two parties.

To successfully incorporate web 2.0 tools in the library, it is necessary that the above mentioned constraints that would deter a library from adopting technologies into their systems should be attended to in this era of technological and information explosion.

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