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## RESEARCH ARTICLE

### Web 2.0 and libraries

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#### Abstract

This article posits a definition and theory for Web 2.0 and its tools. With web 2.0 tools, soon libraries were enthusiastic to innovate and reach out to the patrons and their information needs. The Web 2.0 refers to the interactive, user-centered design of the World Wide Web where users not only access the web content but at the same time generate the web content. It is a model for library service that encourages purposeful and regular changes, inviting user to participate in the creation of both the virtual and the physical library services they desire, supported by constantly evaluating services. Web 2.0 websites enable users to do more than just retrieve information. Library 2.0 does not replace traditional library services, but somewhat, adding additional functionality to them. The use of these web 2.0 technologies and applications will constitute substantive and significant change in the history of libraries. The library's collection and services will change. There is possibly a great synchronicity between Web 2.0 and librarianship, but library 2.0 will transform the profession. The paper applies addressing how Web 2.0 technologies such as blogs, wikis, social networks, tagging, RSS feeds, and mashups might intimate changes in how libraries provide access to their collections and user support for that access and what will happen to Web 2.0 technologies such as blogs and wikis in the future. ? So, it might be possible that in 20 years 'time Web 2.0 applications such as Twitter, Facebook or even Wikis may not exist any longer.

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#### Introduction

While the term is widely defined and interpreted, "Web 2.0" was reportedly first conceptualized and made popular by Tim O'Reilly and Dale Dougherty of O'Reilly Media in 2004 to describe the trends and business models that survived the technology sector market crash of the 1990s (O'Reilly, 2005). The companies, services and technologies that survived, they argued, all had certain characteristics in common; they were collaborative in nature, interactive, dynamic, and the line between the creation and consumption of content in these environments was blurred (users created the content

in these sites as much as they consumed it). The term is now widely used and interpreted, but Web 2.0, essentially, is not a web of textual publication, but a web of multi-sensory communication. It is a matrix of dialogues, not a collection of monologues. It is a user-centered Web in ways it has not been thus far (Maness, 2006).

Web 2.0 and its tools brought significant and sought changes not only to the way we use the World Wide Web but also to the way we seek/use/create information. Trying to respond to these forthcoming developments libraries faced up to new challenges and began to reconsider their services and strategies. A basic insight will be given into the components of Web 2.0 and the use of its technologies in a library

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environment. The appearance of Library 2.0 will be raised along with some considerations on the impact brought by these technologies to libraries.

### **Concept and characteristics**

An obvious difference can be drawn between Web 1.0 and Web 2.0. While Web 1.0 offered less interactivity to the user, very little cooperation was permitted and websites' content was fixed, Web 2.0 allows connection with a community of users in addition to the sharing and contribution of new content. Tim Berners-Lee in his book *Weaving the Web* describes how he developed the web and also how he was creating a way to share information. When the Web 1.0 started in the 90s it was much more complicated and difficult to write than read this information. Writing required the skill to use HTML and also the use of a web server, which were not common at the time. Most people used the web to receive information, but only a small number were creating it. Web 2.0 websites enable users to do more than just retrieve information.

The term 'Web 2.0' was coined by O'Reilly Media for the opening Web 2.0 Conference in 2004. Even though there is no set definition of Web 2.0 and some controversy surrounds this term (Kroski, 2006) this definition is suggested: "The Web 2.0 refers to the interactive, user-centered design of the World Wide Web where users not only access the web content but at the same time generate the web content." (Aqil, Ahmad and Siddique 2011, p. 395)

Supported by O'Reilly this platform enables "creating network effects through the architecture of participation", and going beyond the page metaphor of Web 1.0 to deliver rich user experiences." (O'Reilly, 2005)

The rich user experience aspect of Web 2.0 can actually be applied to a library: It is a model for library service that encourages purposeful and regular changes, inviting user to participate in the creation of both the virtual and the physical library services they desire, supported by constantly evaluating services. (Brophy, 2007)

Software and applications are accessible on the web platform for users to subscribe or download as a service and no more as a pricey packaged product as in Web 1.0 that required being purchased and installing. Web 2.0 conducts to the creation of applications that enables users to create new content. By designing uncomplicated software that can be developed together with the feedback from users, information can be shared instead of being controlled. The importance of a feedback works towards encouragement of cooperation and enhance.

In addition, the long tail effect (Anderson, 2006) through networking can be crucial in sharing resources either between libraries or with patrons. Exploring and making accessible numerous threads of common interests can in fact bring together communities of users, students, professionals, or the general public.

With web 2.0 tools, soon libraries were enthusiastic to innovate and reach out to the patrons and their information needs. It can open a variety of possibilities when offering interactivity with their patrons even if they would be far away, encouraging online real time communicating and referencing.

### **Library 2.0 – a mashup**

The term of Library 2.0 first emerged in Michael Casey's blog in 2005 and is now extensively used by librarians and information professionals. Library 2.0 can be considered as a two-way service. It allows users to access information but at the same time gives them the opportunity to become more involved with the library's services by providing feedback through integrated web 2.0 technologies. (Curran, Murray, and Christian 2007)

Library 2.0 can change the way librarians serve and interact with library users by making information accessible wherever and whenever the patron needs it. (Chad and Miller, 2005). Library 2.0 does not replace traditional library services, but somewhat, adding additional functionality to them.

An advocate of Library 2.0, Miller (2005) argues that if libraries want to remain useful to their users they need to engage in Web 2.0 technologies. Miller claims that libraries could use Web 2.0 technologies to reach out to potential library users who may not generally visit the physical library or the library's website. Web 2.0 also provides an alternative way for libraries to serve their existing users.

Many libraries have been exploring and experimenting with different Web 2.0 technologies as a potential way to improve and complement their existing services. While they evolve in order to meet the need of their today's ever-changing information users, it becomes more essential to adopt the new technologies users are using. Although, libraries are also changing for reasons other than keeping up with their users need. Libraries are facing budget cuts and staff cuts, forcing libraries to look for other ways to deliver their services. For these reasons, librarians and information specialists have applied different Web 2.0 technologies. (Casey and Savastinuk, 2006)

**Blogs** are Web 2.0 technology that can be used as a method of publishing information in an accessible and effective way. Blogs present information in innovative ways and this allows libraries to

communicate with their users via blog and keep them informed about library services. They are used by many libraries as an online space to publicize their information about new publications, event and readings.

Vanessa Hill (2011a), Senior Liaison at Middlesex University, has created a blog to provide regular updates and links to useful resources and information for students studying Computing Science and Engineering and Product Design. She keeps updating her blog on a regular basis with up-to-date information on library resources, such as information on new books to borrow. Her blog also provides other important information for student, including hyperlinks to the University's library subject guides.

**Wikis** are another Web 2.0 technology that can be used to present digital data and also organize information. A wiki can also be used to publish information in an effective way since a wiki is a website which makes it possible for user to work collaboratively to add and update information on a particular subject. Wikipedia is an example of a well-known wiki. (Bradley, 2007) Libraries use wikis to promote interaction between users and staff, patrons can pose their questions; give information and / or feedback which librarians will answer. This exchange of information is cautiously archived to be used in future reference. However, it needs to be considered more as a resource repository rather than for research itself.

The underlying idea of a wiki can be in the ease of use, making it a flexible tool that encourages participation, improves customer service and referencing. It can also be used by librarians who look for policies, practice guidelines, for project management and training purpose. (Sodt and Summey, 2009)

Birkbeck Library has a wiki for library staff which gives library staff the opportunity to contribute to pages such as the weekly staff newsletters. Information containing hyperlinks to the library catalogue, timetables, and also information from management team meeting are found on the wiki. [http://wiki.bbk.ac.uk/lib/Main\\_Page](http://wiki.bbk.ac.uk/lib/Main_Page)

However, there are drawbacks to wikis, as inaccurate information could be published. Nevertheless, one should consider that other editors who are accurate and attentive to details found and correct errors created on Wiki entries.

Despite their disadvantages both wikis and blogs can be great additions to the existing information services of a library, allowing users to leave comments, correct/ update information and sharing content.

#### **Instant messaging:**

Instant messaging is another tool which has already been embraced by the library community with the sole aim of communicating with its users. It enables real time text communication between individuals. Libraries employed it to supply "chat reference" services, where patrons can communicate with librarians. Therefore this virtual reference service can be carried out without requiring the patron's attendance in the library and also the real time advantage improves the answer efficiency.

#### **RSS links:**

RSS links (Real Simple Syndication) create a feed in XML for users to subscribe to. When a particular piece of information is posted on a library blog/web page, users can access it from this link. Instead of having to check the page regularly they get separately the updates from there redistributed and even seen offline.

#### **Social networks:**

Social networks have enabled people, companies, institutions, and organizations share information on different levels. A profile is created where documents, pictures, music, and video clips are downloaded; emails can be sent; blogs can be posted and instant messaging is possible. They have all been contributing to the expansion of an increasing number of online communities.

These social networks have been adopted by libraries for the general users' common interest or to form a work intent group. Creating their own page and publishing it using for instance Facebook applications will make it simpler accessible.

Social networking could allow librarians and users not only to communicate, but to change and share resources dynamically in an electronic medium. Patrons create account with the library networks, see what other patron might have in common to their information needs, suggest resources to one another, and the network suggests resources to patrons.

#### **Tagging:**

Tagging basically allows users to create subject headings for the object at hand. Tagging is essentially Web 2.0 since it enables users to add and change content (data) and content describing content (metadata). (Shanhi, 2006) describing data (metadata) and tag a particular book, users can review, recommend, and catalogue their own collection. i.e. [www.librarything.com](http://www.librarything.com)

The similar principle can be applied to users where they can take part in tagging the library catalogue for instance. Online tagging is now a common and

simple task for patrons to make their content (data) visible: on some websites such as Flickr photos can be tagged by any users who can describe as they desire. This freedom on cataloguing content can clearly compromise accuracy. However cloud tagging is an excellent and easiest form of data visualization. The main library catalogue at City University enables any patron to tag a book or when searching for a particular title cloud tagging can certainly help find more resources connected to the title in the question.

[http://encore.city.ac.uk/iii/encore/record/C\\_\\_Rb1397377\\_\\_Sweb+2.0\\_\\_P0,14\\_\\_Orightresult\\_\\_X4?lang=en&suite=pearl](http://encore.city.ac.uk/iii/encore/record/C__Rb1397377__Sweb+2.0__P0,14__Orightresult__X4?lang=en&suite=pearl)

### **Mashups:**

Mashup are web based applications that use content from more than one source in order to create a single new service displayed in a single graphical interface. (Engard, 2009) This could include anything from simple mapping of libraries' locations to a more complicated mashup which would help users with the fast retrieval of needed information by filtering the content of remote resources based on particular parameters. (Fitcher, 2009)

Libraries can create a mashup by combining various services and technologies in a new service page. Library 2.0 is actually a big conceptual mashup of web 2.0 tools adapted to library services. (Maness, 2006) Library 2.0 is a mixture of wikis, blogs, instant messaging, social networks, and streaming media.

### **Conclusion**

The use of these Web 2.0 technologies and applications will constitute substantive and significant change in the history of libraries. The library's collection will change, becoming more interactive and completely accessible. The library's services will also change, focusing more on information literacy and the facilitation of information transfer instead of supplying controlled access to it.

For a library more important than make use of technologies to bringing society to collaborate should be the focus on the service supplied and the quality of information delivered. Rather than just using social media tools for some apparent purposes, libraries have to consider first the need for core procedure and integrated services. There are numerous libraries, especially academic ones that have already undergone these core processes in integrating web 2.0 tools in their services and fairly successful so.

There is possibly a great synchronicity between web 2.0 and librarianship, but viewed in history, library 2.0 will transform the profession. Rather than

creating services and systems for users, librarians will enable patrons to create them for themselves.

What will happen to Web 2.0 technologies such as blogs and wikis in the future? Will libraries be using them in 20 years' time? Abram (2008) suggests that Web 2.0 technologies might not exist because of the semantic Web as he states "Web services or the emerging semantic Web may replace such things as social networking sites and repositories." (Abram, 2008, p. 21) So, it might be possible that in 20 years 'time Web 2.0 applications such as Twitter, Facebook or even wikis may not exist any longer.

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