

# Web 2.0: The Renaissance in Library and Information Management

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## Abstract

*The term “Web 2.0” was introduced by the O’Reilly Media Web 2.0 conference in 2004, which focused on social uses of the Web. “A collective term for certain applications of the Internet and the World Wide Web, including blogs, wikis, video sharing services, and social media websites such as Facebook and MySpace, which focus on interactive sharing and participatory collaboration rather than simple content delivery”. This paper is mainly highlights the Definitions, Characteristics, Key Features, Concepts, Principles, Applications, Learning Mode, Technologies, Implementing, Web 2.0 Applications used for LIS Services, Purposes, Library 2.0, Ten Web 2.0 Tools, Directory, Advantages, Benefits and General Issues, Skills of Librarians 2.0, Traditional Roles, User Expectations, List of Experts and so on.*

**Keywords:** Learning Mode, Technologies, Web 2.0 Applications used for LIS Services, Ten Web 2.0, Traditional Roles, User Expectations.

## Introduction

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. The term Web 2.0 was coined by Dale Dougherty (O’Reilly Media) and Craig Cline (MediaLive) in 2004. Web 2.0 and libraries are well suited for marriage, and many librarians have recognized so. It is affords connections among

people, people who can create content ideas, thoughts, and full-blown theories can connect with those who may respond, augment, and redistribute that content in new ways. Other names for Web 2.0 include the “Two-Way Web,” the “Read/Write Web,” and the “Participatory Web” all pointing to the fact that this incarnation of the Web *is not* made up of static pages and one-way interaction.

Libraries, unlike other information systems, enjoy being able to implement both systems simultaneously. That is, while a specialized person assigns metadata with a controlled language, providing the documents a structure, users participate by adding their own tags to these documents, their comments and opinions, votes, bookmarks as favorite, etc., thus making the meta-information a great value added which couldn't have been offered before.

**Definitions of Web 2.0**

- **ALA TechSource:** 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. We will all be publishers and creators of our own information and entertainment channels with these applications”.
- **Wikipedia:** “The phrase Web 2.0 was created by O’Reilly Media to refer to a supposed second generation of Internet-based services that let people collaborate and share information online in a new way; such as social networking sites, wikis, communication tools, and folksonomies”.

**Characteristics of Web 2.0**

Web 2.0 includes the second generation web based services such as

collaborative publishing sites (Facebook, Bebo, MySpace and Friendster etc), wikis, blogs, social bookmarking sites (del.icio.us, furl, digg etc), and photo sharing sites (flickr, photobucket, etc.). It appears that Web 2.0 phenomenon is not going to stop here but will grow in popularity at a faster pace. Its impact can be felt in all frontiers of knowledge and professions (Harinarayana and Raju, 2010). Moreover, the following are the characteristics of Web 2.0:

- Always in ‘beta’ (development stage)
- Free or near free
- Innovative reuses of existing content
- Interactive and Participatory
- Rich user interface
- The Web as a decentralized system
- The Web as an expression of collective intelligence
- The Web as participative architecture
- Users created and customized value

These striking features of Web 2.0 have made libraries around the world keen to integrate Web 2.0 features – such as Really Simple Syndication (RSS), Blogs, Wikis, user tagging sites (del.icio.us, furl, digg etc) instant messaging (IM), and social networking sites like Facebook, and Myspace, etc. – into their library web sites.

O’Reilly (2006) goes on to discuss the differences between Web 1.0 sites and those that fall under the banner of Web 2.0 sites.

Table.1. Web 1.0 vs Web. 2.0

Sl.No.	Web 1.0	Web 2.0
1.	DoubleClick	GoogleAdsense
2.	Ofoto	Flickr
3.	Akamai	BitTorrent
4.	mp3.com	Napster
5.	Brintannica online	Wikepedia

6.	Personal websites	blogging
7.	evite	Upcoming.org and EVDB
8.	Domain name speculation	Search engine optimization
9.	page views	Cost per click
10.	Screen scraping	web services
11.	publishing	participation
12.	Content management systems	wikis
13.	Directories (taxonomy)	Tagging (folksonomy)
14.	stickiness	syndication

It is understood from the table that Web 2.0 is the advanced version of Web 2.1 technologies which is the appropriate media to build many virtual collaborative societies among students in local and global classrooms. Students and teachers from any corner of the world would be able to participate in such virtual communities to practice effective multicultural skills with no or minimum cost.

**Web Environment**

Interactive activities are an important aspect of distributed learning situations, wherein online communities and learner motivational levels evolve and thrive. Through the thoughtful integration of interactive activities into the online learning process, learners and instructors gain considerable exposure to reciprocally favorable occurrences among learners, content, interface, instructor, community, and self. The thoughtful design and development of a distributed learning environment aids the use of interactive activities in moving beyond mere online interactions towards a more theoretically productive level of interactions. The following web environments are required for learners:

- To produce organized, multimedia knowledge bases by learners
- To access needed information

- To collaborate with others
- To build consensus among members of a community
- To help learners articulate and represent what they know, reflecting on what they have learned

Moreover, the development of learning environments has been a passion for hundreds of years. Previous ventures included uncomfortable wood benches surrounding tables, wood and metal framed desks that were too uncomfortable for even the most serious student, through such unusual and interesting environments that include bean bag chairs, pillows and blankets. But of each of the learning environments tested, none offers the ability of the learner to be free of the chains associated with the classroom environment. Until now, the nearest relative to distributed learning environments was the correspondence course that detailed the books to read and the assignments to be returned by a certain date, with no interactive elements with an instructor; perhaps the closest a correspondence student came to interactions with another human was the final exam that was offered at the nearest university testing center. With the advent of the Internet, all this has shifted to an interesting, complex situation. Now an environment is

available that offers not only the anyplace, anywhere, anytime element to the learning environment, but it also offers the ability of the learner to interact with the instructor, other learners and professionals who are available through the Internet. Distributed learning environments are the correspondence course of the future, with the added benefit of interactive activities (Crawford, 2001).

### Web 2.0 Technological Enhancements

The increasing competitive global environment that organisations today now find themselves in combined with the intense nature of the knowledge economy has meant that, to survive, many organisations have to accommodate innovative ways of exchanging information and knowledge among staff and their customers. Continued technical enhancements regarding how the Internet is used in addition to the varying types of internet technologies organisations can adopt to increase their competitive advantage has given rise to the concept referred to as “Enterprise 2.0”. Enterprise 2.0 organisations are companies that make use of Web 2.0 technologies such as social networking sites or microblogging platforms that are designed to assist in developing customer relationships, saving company costs, improving innovation as well as aiding in customer retention (Keyes, 2013). In contrast, organisations are also employing the use of Web 2.0 technologies for the purposes of internal communication and knowledge sharing among their workforce through following ways:

- Blogs
- IM / Twitter
- Media Sharing
- Photo Sharing (Flickr)
- Podcasts
- RSS / Newsreaders (Aggregators)
- Social Bookmarking & Tags
- Social Networking Sites (Facebook / MySpace)

- Subject guides
- Video Blogs / Video Sharing
- Wikis

Moreover, it is important that the organization must accommodate technological enhancement through robust Knowledge Management (KM) infrastructure in place that could support the Web 2.0 tools that would be potentially aiding the KM processes.

### Library 2.0

Libraries and librarians began to discuss Web 2.0 services and their relevance in library context soon after the term was coined in 2005 (Chad and Miller, 2005). The background of the discussion can be seen in the context of the availability of new means to be present where the people are and to act how people have started to act in the work and everyday life (Farkas, 2007). The existence of Web 2.0 technologies made several librarians ask themselves, what these technologies could mean and do in the context of libraries and library services eventually leading to the formulation of a derivative notion library 2.0 (Casey and Savastinuk, 2007). Another notion underpinning both Web 2.0 and Library 2.0 was the concept Business 2.0 coined in the name of the Business 2.0 magazine. The concept was used to refer to a new, next version, economy in much the same way as Web 2.0 and Library 2.0 refer to novelty in these two fields (Kim, 2009). The key aspects of the Library 2.0 are defined by the following points:

- A User-centered design
- A pattern’s search to make room for the majority of users
- Contents come from different sources and their integration must be facilitated.
- Attempt to use the collective intelligence
- Integration of different software is usually required
- The use of web 2.0 applications is common
- The use of free software is common

In the blogs of library and information science professionals, also called the “biblioblogosphere”, Library 2.0 has been hotly debated. There is some resistance to the concept; the Wikipedia article on Library 2.0 was even nominated for deletion in 2006. There are, however, many advocates of Library 2.0 who have tried to find a relevant definition. Brevik (2006), for example, states that “Library 2.0 is the natural evolution of library services to a level where the library user is in control of how and when she gets access to the services she needs and wants”. Fichter (2006) provides the following formula: “Library 2.0=(books ’n stuff+ people + radical trust) × participation”. Crawford (2006) gathered statements on Library 2.0 from blogposts and comments and found a total of seven definitions and 62 views. Some bloggers saw Library 2.0 as an evolution; others saw it as a revolution. Crawford summarizes his work by differentiating Library 2.0 and “Library 2.0”, where library 2.0 includes both new and older software tools that are useful for providing improved and new library services. “Library 2.0”, however, is a bandwagon and hype (Kim, 2009).

### **OPAC 2.0**

Of all online services offered by the library, the catalogue is what generates the most visits to the website, and possibly what requires the most investment in time and money. OPAC 2.0 tries to take advantage of the users’ potential to enrich their contributions and thus increase the catalogue’s value. The different functions of a catalogue 2.0 may be grouped into the following points (Muthu and Sivaraman, 2013):

- Information architecture
- Personalization
- Interaction between users
- Interoperability and the syndication of contents
- Analyze the use of information  
Mindset for Librarian 2.0

The internet and IT infrastructure may vary from place to place, or even from library to

library within the same vicinity. Irrespective of the fact, libraries and librarians need to adopt a Library 2.0 and Librarian 2.0 mindset. The implementation of the idea should address the following cardinal points:

- Be aware of the needs of the Net Generation  
Give 2.0 tools a try to connect to this generation
- Explain how information is created and communicated and help users develop a sense of context when using information
- Encourage critical thinking

### **Web 2.0 and Future Proofing**

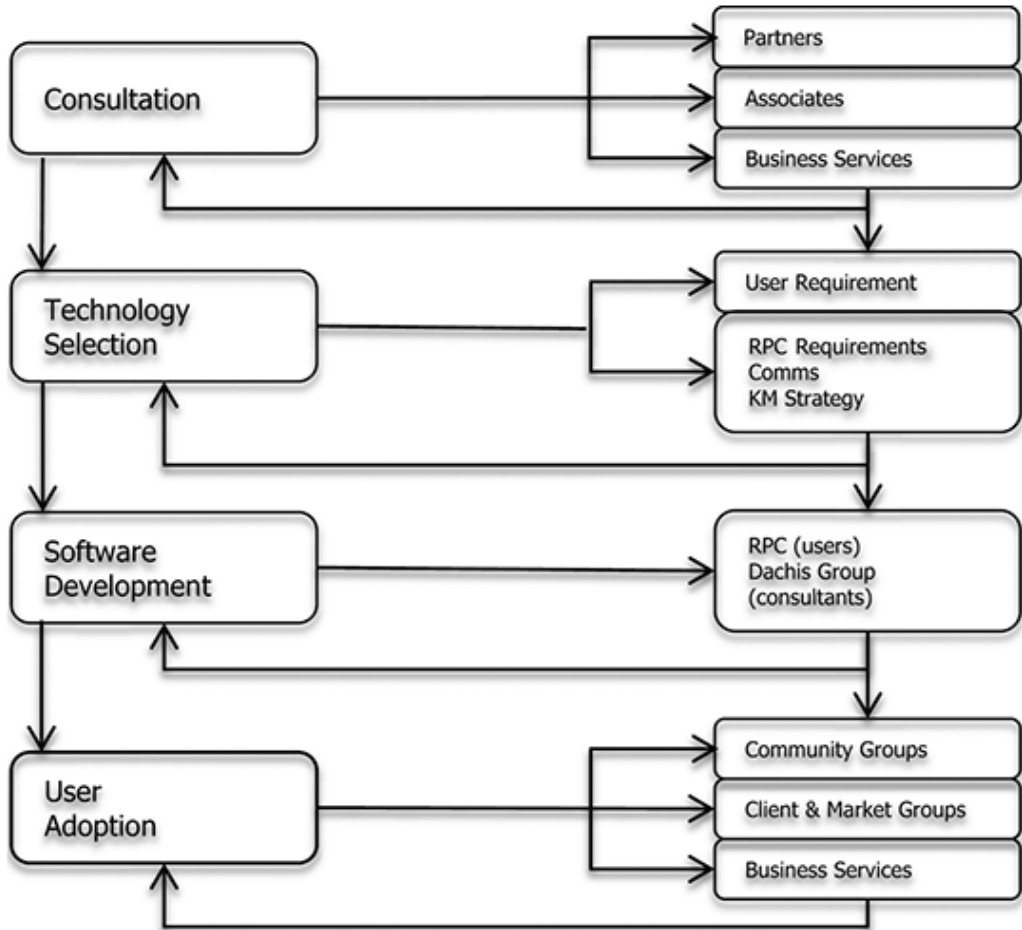
Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, Given the rapid pace of technological change, in today’s information environment it is important to develop services that are adaptable and forward looking. Although it is true to say that there are no guarantees that specific Web2.0 services will be around in the future, it is clear that they mark a perceptible change in how the web is used. It is therefore important that library services adapt to these services in order to keep up with users’ demands and expectations.

If libraries do not keep up with emerging technologies, continuously striving to provide responsive services, it will become increasingly difficult to catch up. Thus, libraries could be at risk of providing out-of-date and irrelevant services that appeal to a decreasing user group.

### **Successful Implementation of Web 2.0**

A consolidated overview of social technology characteristics from a KM perspective would also aid practitioners seeking to implement Web 2.0 tools to support organisational and personal learning, and KM strategies. Janes, et al, 2014

Figure 1. Methodology Implementation



Source: Janes, et al, 2014

It is understood from figure 1 that, consultation, technology selection, software development and user adoption are the key elements of successful implementation of web 2.0.

**Conclusion**

Traditionally, information flowed in one or two directions. Through the new Web, content flows in a variety of directions that depend on the behavior of those who produce the

information and those who use it. Through Web 2.0 new information constructs are possible interactive and community contributed documents that tie in with dynamic and independent digital libraries of web resources, and the more formally published ideas of thinkers and journalists in the field and none of these people need know each other.

There's a comparable quiet revolution underway right now, one that is likely to fundamentally transform the way we use the Web

in the coming years ... the result is the equivalent of a massive software upgrade for the entire Web, what some commentators have taken to calling Web 2.0. Essentially, the Web is shifting from an international library of interlinked pages to an information ecosystem, where data circulate like nutrients in a rain forest.

The Web 2.0 movement is laying the groundwork for exponential business growth and another major shift in the way our users live, work, and play. We have the ability, insight, and knowledge to influence the creation of this new dynamic and guarantee the future of our profession. (Steve Johnson, 2005)

## References

- Ata-ur-Rehman & Shafique F. (2011). Use of Web 2.0 and Its Implications for Libraries: Perceptions of Information Professionals in Pakistan. *Library Philosophy and Practice*.
- Boateng, R et al., (2010). When Web 2.0 becomes an organizational learning tool: evaluating Web 2.0 tools. *Development and Learning in Organizations*, 24(3), 17-20.
- Brevik, T. (2006). Library 2.0=My Library? Retrieved from: <http://lib1point5.wordpress.com/2006/04/12/library-20-mylibrary/>
- Casey, M.E. & Savastinuk, L.C. (2007). Library 2.0. A Guide to Participatory Library Service. Information Today, Medford, NJ.
- Chad, K. & Miller, P. (2005). Do libraries matter? The rise of library 2.0. White Paper, Talis, Birmingham. Retrieved from: [www.talis.com/applications/downloads/white\\_papers/DoLibrariesMatter.pdf](http://www.talis.com/applications/downloads/white_papers/DoLibrariesMatter.pdf)
- Clyde, L A (2004). Library weblogs. *Library Management*, 25(4-5), 183-189.
- Crawford, C. M. (2001). Developing webs of significance through communications: appropriate interactive activities for distributed learning environments. *Campus-Wide Information Systems*, 18 (2), 68 – 72.
- Crawford, W. (2006). Library 2.0 and ‘library 2.0’. *Cites & Insights*, 6(2), 1 32.
- Currie, J P (2010). Web 2.0 for reference services staff training and communication. *Reference Services Review*, 38(1), 152-157.
- Farkas, M.G. (2007). Social Software in Libraries: Building Collaboration, Communication, and Community Online. Information Today, Medford, NJ.
- Fichter, D. (2006). Web 2.0, Library 2.0 and Radical Trust: A First Take. Retrieved from: [http://library2.usask.ca/~fichter/blog\\_on\\_the\\_side/2006/04/web-2.html](http://library2.usask.ca/~fichter/blog_on_the_side/2006/04/web-2.html)
- Harinarayana, N. S. & Raju, N. V.(2010). Web 2.0 features in university library web sites. *The Electronic Library*, 28 (1), 69 – 88.
- Huwe, T. K. (2004). Keep Those Web Skills Current. *Computers in Libraries*, 24(8), 40-42.
- Janes, S. H., Patrick, K. & Dotsika, F.(2014). Implementing a social intranet in a professional services environment through Web 2.0 technologies. *The Learning Organization*, 21 (1), 26 – 47.
- Jeyshankar, R & Thanuskodi, S (Ed), (2014). Proceedings of the UGC sponsored National Seminar on Knowledge Management in Electronic Environment: opportunities and challenges. 21-22 March, Alagappa University, Karaikudi. pp. 212.
- Keyes, J. (2013). Enterprise 2.0: Social Networking Tools to Transform Your Organization. CRC Press, Boca Raton, FL.
- Kim, H,et al. (2009). What is Library 2.0? *Journal of Documentation*. 65 (4), 668 – 681.
- Linh, N C (2008). A survey of the application of Web 2.0 in Australasian university libraries. *Library Hi Tech*, 26(4), 630-653.

- Mahmood, K. (2008). Library web OPACs in Pakistan: an overview. *Program: Electronic Library and Information Systems*, 42(2), 137-149.
- Maness, J.(2006). Library 2.0 Theory: Web 2.0 and Its Implications for Libraries. *Webology*, 3, (2).
- Muthu, M. & Sivaraman, P. (2013). Online Public Access Catalogue (OPAC): An Overview. *International Journal of Digital Information & Knowledge Management*, 1 (2), 79-89.
- Ramzan, M. & Singh, D. (2009). Status of information technology applications in Pakistani libraries. *The Electronic Library*, 27(4), 573-587.
- Verzosa, F. A. (2008). Conference on Emerging Landscape, Mindscape and Netscape of the Philippine Books, Information Science and Technology for Quality Services”, on Aug 13-15 at Philippine Women College, Davao City, Philippines.
- Web 2.0 Tools, Retrieved from: <http://www.librarygirl.net/2012/04/10-web-20-toolsapps-i-use-most-as.html>
- Web 2.0, definition, Retrieved from: <http://www.businessdictionary.com/definition/web-2-0.html>
- Zimmerman, S. (2008). Web2.0 Wowfor State. Presentation done for workshops across the state of Pennsylvania for Commonwealth Libraries in spring on Jun 12.