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Application of Web 2.0 in Library Services: Are We Ready?

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Abstract:

This paper examines the evolution of the web from static HTML based entity to AJAX based dynamic and participative web, called web 2.0. It categorizes web 2.0 into four broad groups and identifies tools under each group illustratively. It explores the possibilities of applications of these interactive, collaborative and participative tools in enhancing existing library services and the feasibility of introducing next generation library services. The focus of the paper is to cover the topic under discussion from practical point of view.

Key words: ***Web 2.0; Library 2.0; AJAX; Interactive library services; Information Mashups.***

I. INTRODUCTION

Libraries, all over the world are enthusiastic users of technologies since the introduction of PCs in library services in 1970s. The ICT has changed the way libraries organize and disseminate resources to serve users. Almost all library services are presently technology oriented services be it OPAC, RFID-based circulation, digital retrieval and so on. The web technologies right from the 1990s has shaped an array of library services and in one sense it revolutionized the user access to library resources by (any)[5] – any library resources (in digital form) can be accessed by any user (members and non-members) from anywhere (global presence) at anytime (no time-bar) in any language (user interface and search/retrieval). This technologies help libraries to overcome two fundamental barrier to information communication – time and space. So it's no wonder that most of the library services are presently web-centric in nature. But the present web is changing from CGI-based technologies to AJAX-based technologies and now it can support three most important user-centric parameters – participation, interaction and collaboration. This transformation of the present web from static monologue to dynamic dialogue is termed as second generation web or simply web 2.0. The libraries are adopting the web 2.0 technologies to develop interactive, collaborative and participative library space.

II. A BRIEF HISTORY OF TRANSFORMATION OF WEB

The term Web 2.0 was coined in 1999 by Darcy DiNucci and was popularized by Tim O'Reilly at the O'Reilly Media Web 2.0 conference in late 2004. (O'Reilly, 2005). The key feature of Web 2.0 is that it may allow users to interact and collaborate with each other in web space and thereby ensures creation of community knowledge. This feature is a step towards the vision of Sir Tim Berners-Lee, who envisioned the Web as "a collaborative medium, a place where we [could] all meet and read and write". (News, 2005)

"When you write a blog, you don't write complicated hypertext, you just write text, so I'm very, very happy to see that now it's gone in the direction of becoming more of a creative medium."
Tim Berners-Lee

In short, the transformation of web is a journey from text-based web to data-based web, from HTML as lingua franca to XML as lingua franca, from monologuge to dialogue, from static to dynamic, from software to service, from user-as-consumer to user-as-contributor. The major transformation features may be enumerated as below (Mukhopadhyay, P., & Das, S. K,2008):

WEB 1.0	WEB 2.0
Read only	Not only reading but also writing
Client srever architecture	Peer to peer
Home pages	Web blogs
Portals	RSS
Taxonomy	Folksonomy
Owning	Sharing
Dial up	Broadband
Companies	Communities
Technology	Attitude

All these features are ensured through four attitudes of web 2.0 - It uses network as platform; Promotes architecture of participation; Power by communication and interaction tools collection (termed as social software) and allow users 'participation in knowledge cycle and facilitates collective wisdom.

III. WEB 2.0 TOOLS AND SERVICES: CATEGORIES

Mukhopadhyay (2008) in his paper categorized web 2.0 services (in view of their applicability to library services) in four major groups (although these groups are not mutually exclusive) - i) The Read/Write web component; ii) Social Networking component; iii) Collective intelligence support component; and iv) Information Mashups component. The brief features of these components of web 2.0 discussed here -

1. The read/Write web component:

Tools that are leveraging read/write Web include blogs, RSS (Really Simple Syndication or Rich Site Summary), online storage and sharing tools (such as MySpace, Face book, YouTube, Podcasts) etc. Another interesting development is availability of word processing 2.0 tools (such as Writely.com), which allow users to treat the Web, not their PC, as their favored platform of word processing activities. (Mukhopadhyay, P., & Das, S. K).

2. Social Networking component:

Tools such as instant messaging, discussion forum, event listing (chronological and upcoming), Flickr, Jumpcut etc. are enhancing online socialization through community oriented communication and interaction. Some of the tools under the group read/write Web such as Facebook, MySpace, and YouTube may also be considered as part of this category. There are presently 289 social networking tools that are available through "Add-to-this" service.

3. Collective intelligence support component:

Wikis are currently most popular tools for collaborative knowledge sharing, and the best-known example is Wikipedia (http://en.wikipedia.com/wiki/). Other tools such as LibraryThing, PaperBackSwap Second Life, Digg, Technorati, Folksonomy, Social bookmarking, Amazon services are also facilitating the collective wisdom movement in the next generation Web. (Mukhopadhyay, P., & Das, S. K)

4. Information Mashups component:

Information mashups are becoming popular application of web 2.0 around the world such as Kohazon (integration of Koha OPAC with Amazon services), Unthirsty (a combination of Google Maps and Happy hour finder, which shows the nearest happy hour place against user query), WikiBios (a mashup where user can create online biographies of each other in a Wiki setup), LibraryLookup (integration of Google maps with library directory service in UK), Go-Go-Google-Gadget (Ann Arbor District Library's effort for integration of library OPAC with personalized homepage service offered by Google) and many other similar services. (Mukhopadhyay, P., & Das, S. K).

Let we discusss some Web 2.0 applications in brief-

Blogs	:	An increasingly quick and popular way to share your thoughts with the world. Blog is short for web log-an online journal where information (not only text, but also audio, photographs and video) is posted on a regular basis and appears in chronological order.
Digg	:	Interactive news sites where users submit and decide what stories are shown. Users can then click on the digg button attached to the story to indicate they like the story. News items receiving sufficient number of diggs are listed in the homepage for further comments.
Flickr	:	A photo sharing service that allows users to upload, share, comment on, and categorize photographs. Users can label photographs using "tags" or keywords (effectively subject indexing but without a controlled vocabulary).
Instant Messaging	:	Allows real-time text communication between individuals.
Jumpcut	:	Gives users access to free editing tools that allow them upload, edit, remix and publish video footage.
LibraryThing	:	Allows users to catalogue their books and share lists with each other. Librarians and patrons can thereby interact and recommend their resources to each other. Members can view book cover images, comment, recommend and review books, form special interest groups, enter DDC number, rearrange books on virtual shelves, and add star rating of books.
Mashups	:	Mashups are applications that take data from more than one (often unrelated) online source and combine it to create new hybrid services unintended by the original content owners.
MySpace and Face book	:	Allows users to set up interactive and personalized web profiles detailing personal information like; education, age, interests, and hobbies. Users can upload photographs, videos, and music, create a blog, post comments on other user profile pages, and send messages to other users.

Paperback Swap	:	An interesting Web 2.0 service that operates as a lending library.
Podcasts	:	Podcasting is simply making audio files (most commonly in MP3 format) available online so that users can then download them to their desktop media player (users need a podcatcher, a piece of software that allows downloading podcast episodes via a RSS feed).
RSS feeds	:	RSS (Really Simple Syndication) allows users (after subscribing) to receive any new content added by a website, thus avoiding the necessity of continually visiting sites to check for updates.

IV. APPLICATION OF WEB 2.0 IN LIBRARY: LIBRARY 2.0

Web 2.0 technologies are all set to change the way users interact with the resources and services available in the Web. Since the early days of Web, libraries are increasingly using it as a platform to disseminate services. The definitions given by early researchers and bloggers vary greatly in terms of scope, coverage and nature. Some of the definitions are given below to identify essential attributes of the concept Library 2.0. (Mukhopadhyay, P., & Das, S. K).

Library 2.0 is the application of interactive, collaborative, and multi-media web-based technologies to web-based library services and collections (Maness J. , 2006).

Library 2.0 simply means making your library's space (virtual and physical) more interactive, collaborative, and driven by community needs. Examples of where to start include blogs, gaming nights for teens, and collaborative photo sites. The basic drive is to get people back into the library by making the library relevant to what they want and need in their daily lives…to make the library a destination and not an afterthought. (Sarah Houghton, September 2006)

Library 2.0 describes a subset of library services designed to meet user needs caused by the direct and peripheral effects of Web 2.0. (Michel Habib, November 2006)

Library 2.0 is a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The concept of Library 2.0 borrows from that of Business 2.0 and Web 2.0 and follows some of the same underlying philosophies. This includes online services such as the use of OPAC systems and an increased flow of information from the user back to the library. (Wikipedia, May 2007)

Library 2.0 is very much influenced by technology-driven, two-way, social interactions between staff and staff or staff and patrons. L2 has provided a framework within which we've been able to re-evaluate virtually every aspect of classical librarianship with the end goal of usability and findability in mind. (Michael Stephens, May 2006)
However, we may group web 2-.0-enabled library services into two groups -

I. Services in automated library systems:

"Web 2.0 and libraries are well suited for marriage, and many librarians have recognized so." (Jack Maness, 2006).

Automated library services are adopting an array of web 2.0 tools in software architecture to develop a set of new services such as RSS as alerting tool, Atom feed as tool to provide e-SDI, social networking tools to promote books and other library materials, information mashup to integrate library datasets with global open datasets like Amazon book cover, Amazon book review, LibraryThing etc. These tools allows to generate rich datasets in web-OPAC on-the-fly, supports user-centred alerting services, allows virtual tour in library stack, user interaction in the form of comments/ratings/tagging and so on. In summary, we may say that the web 2.0-compliant library services are generating rich user experiences during serach and retrieval. It also allows user-driven book reviews, integration with Library of Congress ToC services and many other user-driven services like reading advise, discovering people with similar interests etc. The Fig. 1 shows the integration of Amazon cover image, ToC service and social networking tools in library OPAC.

Fig. 1: OPAC Web 2.0: Integration of web 2.0 tools in library OPAC

II. Services in digital library systems:

Similarly, digital library services are also taking advantages of different web 2.0 tools to achieve interactive user interfaces and content enhancements. These are use of RSS feeds, content rating, folksonomy, review submission, social networking tools etc. Shafi, Gul and Shah conducted a study in 2012 to measure the use of Web 2.0 tools and services in digital libraries (1977 to be exact). The findings of this research provides valuable datasets related to application of Web 2.0 tools and country-wise distribution of Web 2.0-enabled digital library systems.

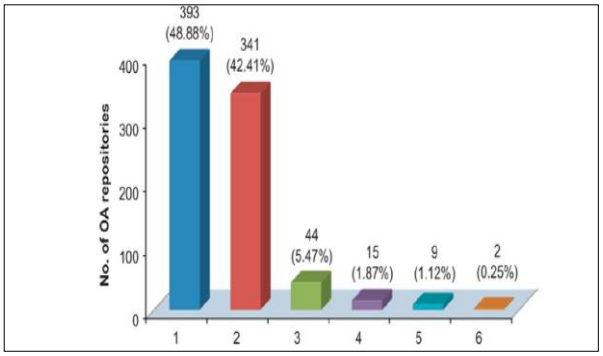

Fig. 2: Application (Number of tools use) of Web 2.0 tools in Open Access repositories systems (Source: Shafi, S.M., Gul, S and Shah, T.A (2012). Web 2.0 interactivity in open access repositories. The Electronic Library, Vol. 31 No. 6, 2013, pp.703-712)

A country-wise distribution of the use of Web 2.0 tools in digital library systems shows that US based OA retrieval systems ranked first and UK and Germany occupied the next positions respectively. One interesting fact is that use of web 2.0 tools in Asian digital library systems are increasing (Taiwan – 83.33%, India – 60% and Japan – 41.56%) in compare with European and American digital library systems.

Rank	Country	Total	Operational	Web 2.0	%
1	USA	398	372	190	51.08
2	UK	193	186	140	75.27
3	Germany	95	92	41	44.57
4	Taiwan	51	48	40	83.33
5	Japan	80	77	32	41.56
6	Australia	65	58	30	51.72
7	Italy	41	40	22	55
8	India	47	35	21	60
9	Canada	50	47	20	42.55
10	Sweden	40	39	14	35.9

Fig. 3: Application (Number of tools use) of Web 2.0 tools in Open Access repositories systems (Source: Shafi, S.M., Gul, S and Shah, T.A (2012). Web 2.0 interactivity in open access repositories. The Electronic Library, Vol. 31 No. 6, 2013, pp.703-712)

V. CONCLUSION

It's now time to conclude this paper but this is only the beginning of a new era of interactive library services through web 2.0 tools. Both automated and digital library services are rapidly becoming web 2.0-compliant library services. New tools and services are coming up almost everyday. Moreover, these tools are trying to integrate different information space on-the-fly in real time and thereby ensuring rich user experiences. In view of the all encompassing applications of web 2.0 tools, McDonald framed a set of new laws for library science in the line of S. R. Ranganathan. These laws upholds the spirit of web 2.0 tools in designing new generation library services.

(1) The library is everywhere.
(2) The library has no barriers.
(3) The library invites participation.
(4) The library uses flexible, best of breed, component based systems.
(5) The library is a human cantered organization.

REFERENCES

[1] Editorial. (n.d.). *Web 2.0 Marketing*. Retrieved 03 23, 2014, from http://starseoservices.com: http://starseoservices.com/our-services/web-2-0-marketing/
[2] Habib, M. C. (2006). Toward Academic Library 2.0: Development and Application of a Library 2.0 Methodology. 49.
[3] Maness, J. ((2006).). Library 2.0 Theory: Web 2.0 and Its Implications for Libraries. *Webology*, 3 (2), Article 25. Available at http://www.webology.org/2006/v3n2/a25.html.
[4] M. Casey & M. Stephens (2006). "Better Library Services for More People". *ALA TechSource Blog*.

[5] Miller, D. P. (n.d.). *Web 2.0: Building the New Library*. Retrieved from http://www.ariadne.ac.uk/print/issue45/miller
[6] Mukhopadhyay, P., & Das, S. K. (2008). Towards Library 2.0: Designing and Implementing the Modern Library Service., 2008 Retrieved 03 /22/ 2014, from http://ir.inflibnet.ac.in/handle/1944/1133
[7] News, B. (2005). *Berners-Lee on the read/write web*. Retrieved 03 /22/ 2014, from http://news.bbc.co.uk: http://news.bbc.co.uk/2/hi/technology/4132752.stm
[8] O'Reilly, T. (2005). *What Is Web 2.0 : Design Patterns and Business Models for the Next Generation of Software*. Retrieved 03/ 22/ 2014, from http://oreilly.com: http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html
[9] Retrieved from https://en.wikipedia.org/wiki/Library_2.0
[10] Scholar. (2005).*"Web 2.0: Compact Definition"* . Retrieved 06/15/2013, from googleusercontent.com: http://en.wikipedia.org/wiki/Web_2.0#cite_note-graham-1

