Library 2.0 and Its Implications on Library services

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 ABSTRACT: *This paper focused the various Web 2.0 tools which can be applied in providing library services and to provide professional support and guidance about the online resources to the remote users. The various tools include social networking, social bookmarking, geo-tagging, social tagging, podcasting, vodcasting, wikis, blogs, RSS feeds, news-feeds, portals and streaming media, develop a platform for licensed and freely available online resources. The library services include circulation, reference services, alert services, document delivery service, bibliographic services etc. Web 1.0 focuses more on the basic functions of the library which is a unidirectional manner of interacting with the users whereas in Web 2.0 it focuses on the participative and collaborative approach to provide better services to the user. Web 2.0 features when amalgamated with library services play a prominent role in improving the library services. A library which makes use to Web 2.0 technology can be called as Library 2.0. Authors have cited few illustrative examples of prominent libraries of India who have implemented along Web 2.0 with few examples of libraries in the United States of America. Its application and impact about how to manage library services and the challenges faced in the implementation are also discussed in this paper. At last it is concluded with the future upcoming avenues in Web 3.0, which focuses on the semantic and the meaningful search and Web 4.0 which focuses on the search based on artificial web intelligence.*

Keywords: Web 2.0, collaborative effort, RSS feeds, wikis, podcasting, blogs, Library 2.0, Web 3.0 and 4.0.

1.0 Introduction

There has been a tremendous increase in the demand of library services in terms of efficiency and speed. The emphasis may be laid on improving the access to database providing computerized library services, minimizing staff requirement and a base of networking with other libraries. The basic requirements in the library automation would be meeting the suitable hardware and software requirement. Conversion and standardization of the library

resources is equally important for faster exchange of information. For the above requirements to be met it is essential to educate and train the library personnel is of vital importance. The application of Web 1.0 techniques which have been focusing on static web pages with content published by the web master and rarely updated with no user participation. The phenomenon has now taken a back seat with the coming up of Web 2.0 which include dynamic web-pages, updated frequently with user's participation making it interactive. Tim O'Reilly (He is the founder of O'Reilly Media and a supporter of the free software and open source movements. He has closely studied the Web evolving over the years) in his blog wrote Library 2.0 = (Books n' Stuff + People + Radical trust) * Participation. Libraries consist of books, resources and users which are used as people in the equation but the idea of radical trust is novel. Radical trust is the confidence which any organization such as government, library, business, process and people entrust upon the online communities[1]. As, it is believed that we are living in a knowledge society with rampant use of ICT in general and internet in particular to obtain information has become possible. A knowledge society differs from an information society in which the former serves to transform information into resources that allows society to take effective action while the latter only creates and disseminates the raw data[2]. The web 2.0 is one of the tools which help the internet users to make the best use of the Web services.

1.1 Web 2.0

Tim O'Reilly popularized web 2.0 as an expression (see figure) and explained it as something which makes use of latest technologies and concepts in order to make the user experience more interactive, useful and interconnecting[3]. The whole idea of Web 2.0 is to make the user participate, share and collaborate work. It definitely has a bright future with so many Web 2.0 based websites coming up. It is a revolution in the field of World Wide Web and will definitely achieve far greater success[4].
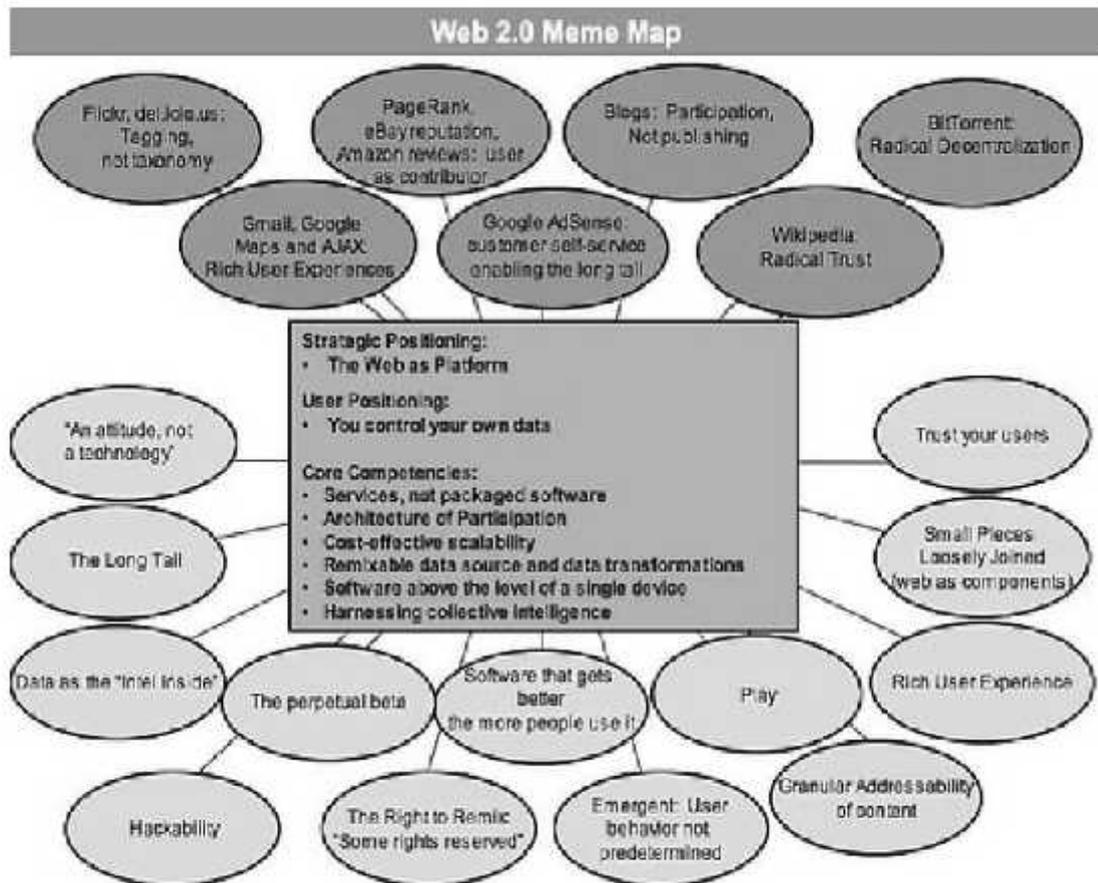
Web 2.0 Meme Map

Figure 1 - Tim O'Reilly's Web 2.0 'meme map'

The web 2.0 includes features like blogs, social bookmarking, RSS feeds, forums, chats, streaming media, atoms, podcasting, social networks etc. The above feature make the user participate in the ongoing services and leads to give-in better services to the users.

1.2 In-house Library Operations and Services & Web 2.0

The computerized in-house operations in a library include acquisition, cataloguing, circulation and serial control etc. The activities of each section are briefly explained below

- Acquisition of library resources which requires budget management, selection of the appropriate reading material, handling of the master file, placing orders to vendors, accessioning and payment of the acquired resources to the vendors are some of the essential functions of the acquisition section.
- Cataloguing which involves the handling of master file and authority file which requires adoption of specific format (i.e. CCF, UK-MARC, UNIMARC, and MARC-21 etc.) for the purpose of cataloguing. The OPAC database which follows the format makes the resources easily accessible to the users.

- The circulation of books among the users takes place through bar-coded member id cards. The bar-coding of the resources acquired in the library which is important for issue and return of the books keeping in mind the 4R's involving reservation, renewal, reminder and recall. Inter library loan, stock verification and weeding out of the out dated library resources are some of the important functions of circulation section as well..

The computerized information services which include alerting services, bibliographic services, document delivery services and reference services.

- The alerting services include CAS (Current Awareness Service), SDI (Selective Dissemination of Information) and electronic clipping service/bulletin board service etc.

- The bibliographic service includes preparing library catalogue, subject bibliography and on-line search of the library resources.

- The document delivery service includes electronic document delivery to the users. (Bibliographic and full-text), interlibrary loan and reprography services.

- The reference service includes answering the reference queries, providing information sources (primary, secondary and tertiary), internet sources (electronic journals, table of contents and library catalogues). The networking facility which requires internet connectivity and access to library database both bibliographic and full text database through library web-site. The library could be a member of library network/ consortia (INFLIBNET, DELNET, INDEST etc) for access to on-line databases like OCLC, Library of Congress etc.

1.3 Library 2.0- Services

The 21st century libraries demand automation and networking, developing digital collection. The access to digital collections through e-books, e-journals, multimedia collections requires a fully fledged map of the digitization process, method and technique. Digital libraries can provide reference service like Ask a Librarian and access to on-line databases. In the Web 2.0 environment Personal web-pages are evolved in to blogs. Encyclopedias into Wikipedia pages, Text based tutorials into streaming media applications, Taxonomies into Folksonomies, Question-Answer/Email to Instant messaging services. The essential elements of Library 2.0 are its user-centered participation in content creation and services. It provides multimedia experience and contains audio and video components as well. It's a "social reach" rather communication between library staff and users (Synchronous i.e. IM and asynchronous i.e. wikis). It provides community service oriented where not just the librarian participates but the entire user community change the library services. The library 2.0 services include synchronous messaging, stream media, blogs, wikis, social networks, tagging, RSS feeds, podcasting, mashups.

- Synchronous messaging is more widely known as Instant Messaging. Real-time text communication takes place between users and libraries-Chat reference services. IM applications like Co-browsing, file sharing, screen capturing, data sharing and mining including Audio and video messaging . The various messaging applications may be Google talk, messenger services or e-mail services. SOUL 2.0, library management software developed by INFLIBNET also employs the chat facility.

- Streaming Media which is a database of tutorials, streaming audio or video, multimedia chat rooms or wikis where users can interact in hand with one another with learning object in hand as happened in a class room or instructional lab and allows media creation, access and archiving.

- Blogs which means "Web log" is an outline chronological collection of personal commentary and links. An established communication tool in the form of Internet Publishing, Easy to create and use from anywhere with an Internet Connection. For example-family blogs, community blogs, war blogs, liblogs etc. The various blogging and software that could be employed is Word Press, Type Pad, Blogger etc.

- Wikis: They are open web pages in which any one registered can publish, amend and change it. The advantages of using Wikis in LIS include community portals, an interactive tool as well as research tool, full text search, easy file uploading and downloading.

- Social Networks: The Social Network Services (SNS) enables librarians and patrons not only to interact but to share and exchange resources dynamically in an electronic medium. Major Websites to provide SNS are myspace.com, facebook.com, habbo.com, orkut.com etc.

- Tagging: It is used to create subjects headings for the objects available in the Web. It allows users to add and change not only content (data) but content describing content. Tagging makes lateral searching easier. Example: USLCSH uses "cookery" where a other English speaking countries "cookbooks".

- Bookmarking: Social bookmarking service is a centralized online service which enables users to add, annotate, edit, and share bookmarks of web documents[5]. Delicious (www.delicious.com), citeULike (www.citeulike.org), bibsonomy (www.bibsonomy.org) are some of the bookmarking tools.

- Really Simple Syndication (RSS) Feeds: RSS is an emerging content creation and management tool provided by the website in XML files for up to date and value added service to the users. Useful current awareness offered, new information sources added in collections, instructional and reference service. Rapid feeds (www.rapidfeeds.com) and Enfeedia (www.enfeedia.com) are some of the software that could be employed for creating and publishing RSS feeds.

- Podcasting is the combination of audio and video (i.e. vodcasting) files. It's a method of distributing multimedia files such as audio programs over the Internet using RSS feed. Library uses podcasting in recording of book reviews by users, new resources, Librarian's tour for usage of library and its services, story time for children and book club promotions, events and programs, speeches by visiting authors. The various sharing applications are YouTube (www.youtube.com) and Motionbox (www.motionbox.com). Various softwares for video/audio editing are Juice (www.juicereceiver.sourceforge.net) and Audacity (www.audacity.sourceforge.net).

- Mashups : It's a hybrid of blogs, wikis, streaming media, content aggregators, instant messaging and social networks. Library 2.0 is a mashups which remembers the users when they log in and allows the users to edit data and metadata, saves the user's tags, IM conversations with librarians, wiki entries with other users. The users are able to make all or part of their profile public. Users can see what other users have similar items checked-out, borrow and lend tags. The user driven catalogue is created mashed with a traditional catalogue.

1.4 Implementation of Web 2.0 in the Library environment in India and US:

There have been several universities and institutions in India and abroad who have tried to implement Web 2.0 in their library services. Few of the institutes who have implemented are as follows:

1. Indian Institute Management, Ahmedabad: The premiere management institute set up in 1961, the library came up in the year 1962. Its library is known as "The VIkaram Sarabhai Library" named after the institute's founder and the famous physicist Vikram Sarabhai. Apart from availing the various e-resources from popular databases like Ebsco Discovery, Springer Link, Taylor and Francis, Euro monitor etc. The institute has a institutional

repository which avails D-Space digital library software. The users can login through Web OPAC and search for the required entries. They also have NICMAN (National Informatics Center for Management) which helps to disseminate business and management information. The library employs KOHA library management software which a unique feature of "My Tag Cloud" where the users can make tags for specific keywords/terms required which is stored in the user's account. KOHA also facilitates the user to check summary of the book transaction done by the user, the suggested books and renewal facility through the user's online account. The user can refer and make use of those terms as and when required. The other Web 2.0 tools employed by the library are RSS feeds on the upcoming events, Messaging, social networking.

2. JAWAHARLAL UNIVERSITY, DLEHI: The central library has a unique collection of electronic cum print resources of books, journals, theses, dissertations, survey reports etc. The library has amazing library extension services like includes Ask a Librarian, book launch function of the faculty members, talk by prominent personalities on important current topics, important articles/blogs published in the prominent dailies, Wifi Garden. The digital library software employed by them is D-Space. The various Web 2.0 tools employed are RSS feeds, News feeds, blogs, IMs

3. NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR: The Central Library set up in the year 1977 equipped with knowledge resources in Science and Technology, Social Sciences and allied subjects. The library is equipped with a digital library and e-learning initiative which digitizes old and rare books, manuscripts and documents. The various Web 2.0 tools employed are RSS feeds/News feeds which displays the latest updates ad happenings in the library, blog which is maintained by the librarian, face book group for the users to connect with the library and among themselves.

4. INDIAN INSTITUTE of TECHNOLOGY, DELHI: The Institute was set up in the year 1961.The Central Library is equipped with e-resources in the form of databases which also includes the Open Access journals. The web 2.0 tools employed into RSS feeds which emphasize on the technology education, higher education, Science and other IITs. The various announcements, latest publications, e-resources, open access courseware come up in the News feeds. The library also includes vodcasting i.e. includes videos to orient the new users about the library services.

5. INDIAN INSTITUTE of TECHNOLOGY, BHUBANESHWAR: The Central Library was fully established in the year 2009 is well equipped with e-resources in the field of science and technology and allied subjects. The website has RSS feeds which keep the readers updated with the important announcements. The News feeds which include library notices, library news and recent publications by the faculty members of the institute. The library also uses social networking tool like Face book.

6. INDIAN INSTITUTE OF PUBLIC ADMINSTRATION: IIPA as established in the year 1954. The Central Library is equipped with collection of 2 lakh books and periodicals and receives 350 periodicals. The web based services include e-resources and research tools which include the addition of new resources to the library, conferences to be held in the near future. The web 2.0 tools included are social networking for connecting to the users using Face book, Tweeter. Podcasting allows sharing the videos for showcasing the library's resources and other important notices.

LIBRARIES & PUBLIC LIBRARIES in U.S

1. UNIVERSITY OF ILLINOISIS, URBANA CHAMPAIGN: UIUC was established in the year 1867. The library boasts of having exemplary knowledge resources in print as well as electronic format. A library has a multitude of resources, harvesters and digitized book of the week blog. The library has library catalogs, I-Share Catalog where the libraries and the other adjoining libraries can share books among themselves, World Cat where catalog is shared by thousands of libraries around the world. The Web 2.0 tools employed are Instant Messaging, RSS feeds /News feeds, podcasting, social networking and blogs.

2. GEORGIA PUBLIC LIBRARY SERVICE: Georgia Public Library Service has a service called Public Information Network for Electronic Services (PINES). It is a public library automation and lending network for 281 libraries and affiliated service outlets in 53 library systems covering 143 counties. It forms a union catalogue for all the constituent libraries.
The web2.0 tools employs are social bookmarking where the user can bookmark the important links and can use it as and when required. RSS feeds/News Feeds to update the users about the upcoming events occurring at various libraries. The social networking tool like Face book is used to stay connected with the users.

3. UNIVERSITY OF MINNESOTA, MINNEAPOLIS: Its established in the year 1851. It is equipped with e-resources cum print resources. The various Web 2.0 services employed are RSS feeds which features about the various events occurring in the campus, announcements, assignment calculators, blogs, social networking, bookmarking, vodcasting.

1.5 Implications of Web 2.0 services

The whole idea of Web 2.0 is to bring in the best possible services for users. Therefore the most important function is to know the user's needs. The use of smart phones is leading to easy and frequent access to the necessary resources. The various tools like blogs, bookmarks, geo-tagging, social networks help in providing services to the users. The comment in the blogs which may be criticism or a word of appreciation helps the library to improve the library services. RSS feeds leads to the highlights the library's special collection and comment of the issues present and the addition of the future resources. Bookmarking the wiki for faster and easy access to it shall be the reality in the near future. Typing the query to the library personnel via instant messaging system or chat with the correct person who deals with it could solve the information queries of the users.. When a bunch of libraries group together and form a union catalogue it becomes easier for the users to get the resource faster in a stipulated time. Organizing orientation program and refresher course program for the staff to provide them training for capacity building. At the same time the administrative staff should not be highly ambitious and should understand the staff member's limitations. Access to the questions of the users is faster through the wiki page, capitalize the network by connecting with as many as possible users. Providing the users with subject guides, gateways and research quick-start platforms so that the user could engage in research and make the optimum usage of the library services. The staff should also be transparent to the users about the policies and rules about the library. The patrons should be well-informed about the library activities as the library should ameliorate with suggestions and views got from them. The library should try to be agile and update itself to the upcoming new technology.

1.6 Library 2.0- A Challenge for Library and Information Professionals

The web technology is completely changing the information environment in terms of its access, search and retrieve, dissemination providing wide range of services which is also applied in libraries and information centers in the reorganization of the library structures and services. Web 2.0 + Library = Library 2.0 is a great challenge for library personnel to make use this sophisticated technology and provide innovate library and information services to undertake the following task.

- Design and development of a dynamic library website

- High speed bandwidth and wireless connectivity

- Regular maintenance of library website (addition, updation, and deletion)

- Emphasis on content creation, content development and content management

- More hyperlinks to web-based library collections and services

- Provision to upload content by users themselves

- Orientation program on Digital literacy and web-based tutorials for users

1.7 Conclusion

The evolution of the WWW, Web 1.0, Web 2.0, Web 3.0 which are already in operation and Web 4.0 which is in panning and designing stage will continue to pose a number of challenges for library and information professionals. The ultimate objective is users' satisfaction. Library 2.0 is completely user-centered and user driven. It's a library for 21st century, rich in content, interactive and social activity oriented. Library 2.0 is a change. It enables access to information across society, sharing and utilization of information and progress of the society. The upcoming tools are Web 3.0 which includes the semantic and meaningful search to the highly ambitious effort of building integrated web based innovative library and information services.

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BRIEF CV:

Manasa Rath graduated with Honours Degree in Chemistry from Miranda House, University of Delhi in 2010 followed by M.Sc from the Department of Chemistry, University of Delhi in 2012. After a brief spell of working in the electronic publishing industry, she joined Master of Science (MS) in library and Information Science offered by Documentation Research and Training Center, Indian Statistical Institute, Bangalore. Her major areas of interest are Metadata Harvesting, Linked Open Data and Web Technologies in Library services.

Prof. Pravakar Rath is a well known library practitioner, educator and researcher in the field of library and information science for the last 30 years. Prof. Rath worked as a faculty member in IGNOU for more than 11 years and contributed to BLIS, MLIS, Ph. D programmes and was instrumental to design, development and delivery of PGDLAN programme through distance mode. Prof. Rath received Fulbright Fellowship (IST) in the year 2003-04 and visited a number of countries namely UK, USA, Canada, Singapore, and Malaysia on different academic and professional assignments. Prof. Rath assumed the charge of Professor and Head of the Department of Library and Information Science, Mizoram University (A Central University), Aizawl since August, 2004 and started 2 years MLIS integrated course and Ph.D in 2005 and M.Phil in 2007. The MLIS course was further revised in 2011 and introduced two years integrated MLIS course under Choice Based Credit System in 2012. Prof. Rath conducted as many as 22 professional development programmes at regional and national level like seminars, conferences, workshops, orientation programmes, refresher courses etc, contributed as many as 30 papers, chaired a number of Technical Sessions, acted as Panelist, and delivered Keynote address in many international and national conferences and seminars. Prof. Rath is presently Dean of School of Economics, Management and Information Science (SEMIS), Mizoram University (A Central University-Accredited by NAAC with A Grade in 2014), Aizawl.