



# Utilization of Web 2.0 Tools in Select Indian Libraries: A Study

Anjali Gulati

## Abstract

Web 2.0 is seen as the second generation of the Web; and Libraries are among the early adopters of Web 2.0 tools which they used to connect and communicate with their patrons. This paper provides a snapshot of prevalence of Web 1.0, 2.0 and 3.0 tools with stress to implementation of Web 2.0 tools which has numerous applications in Indian Libraries. Data was collected through content analysis of Websites of Indian libraries. The data collected revealed that overall 89 selected libraries comprising of special, college, university, school are using one or more Web 2.0 tools. The study identified the types of Web 2.0 tools used, number of tools used, and the different types of libraries, and number of libraries using them. The study revealed that Blog and Facebook are the most popular Web 2.0 tools used by university libraries and school libraries. School librarians were found to be the most passionate users of variety of Web 2.0 tools.

**Keywords:** Web 2.0 tools, Blog, RSS, Twitter, Wikis, Facebook, Instant Messaging, Special Library, College Library, School Library, Internet, World Wide Web

## 1. Introduction

The World Wide Web (WWW) has become an integral part of the daily lives of hundreds of millions of people around the world. Web has become popular and has got transformed into a global information space transcending the limits of space and time. It has changed the way we look for information. It has opened up new world for people and has transformed the way they communicate.

The WWW is at present the major communication media and knowledge management support system. The interface programmes available in WWW are referred to as web services i.e. Web 1.0, Web 2.0, Web 3.0 etc. Most people today can hardly conceive of

life without the Internet (Naik and Shivalingaiah 2008). Progress in information, communication and multimedia technologies and the increasing expansion and use of the Internet, intranets, extranets, web sites etc., are generating fast developments in diverse areas, leading to the proliferation of new working styles based on information and knowledge (Garrigos 2010), where the importance of networks, partnerships and alliances between firms and other agents has become crucial. New networks and the advances in so-called web 2.0 and 3.0 technologies are changing firm structures and value chains or value networks, and the decision-making processes followed by managers. The efficient use of current technologies is therefore crucial in the

modern social and business environment in order to create and consolidate the competitive advantages of modern-day businesses (Garrigos-Simon, Alcamí and Ribera 2012).

## 2. Web Services

A web service is a programme developed to support computer-to-computer interaction over the Internet. Web services are not new and they usually take the form of an Application Programming Interface (API). Today due to extreme competition in business and other fields information exchange and efficient communication has become very important. The web is an increasingly important resource in many aspects of life: education, research and development, employment, government, commerce, health care, recreation and more. The web is a system of interlinked, hypertext documents accessed via the Internet. With a web browser, a user views web page that may contain text, images, videos, other multimedia and navigates between them using hyperlinks. Nowadays, technologies are constantly and dramatically changing and evolving, as they become a utility to improve communications, collaboration, interaction, performance and productivity for businesses and individuals locally and globally (Naik and Shivalingaiah 2008).

### 2.1. Evolution of Web Tools

The tools and services of the earlier phase is known as Web 1.0. In Web 1.0, a small number of writers creates web pages for a large number of readers. As a result, people could get information by going directly to the source. The WWW or Web 1.0 is a system of interlinked, hypertext documents accessed via the Internet. It was merely a system which was a read only web, but with millions of users. It connected connected information to users. It was very much like an ecosystem and has a static HTML. It facilitated Email and Chat. It required only low Bandwidth and limited hardware.

Web 2.0 hints at an improved form of the WWW. Technologies such as weblogs (blogs), social bookmarking, wikies, Podcasts, RSS feeds (and other forms of many-to-many publishing), social software, web APIs, and online web services such as eBay and Gmail provide enhancements over read-only websites. Web 2.0 was a social web. It was a read and write web used by billions of users. It also connected people and unlike in Web 1.0 it enabled participation. It has dynamic HTML wikies, really simple syndication was possible. It facilitated podcasting, video podcasting, blogging, micro blogging, and Social Networking. It required high bandwidth but cheap computing was sufficient.

Web 3.0 is a term that is used to describe various evolutions of web usage and interaction along several paths. These include transforming the web into a database, move to towards making content accessible by multiple non-browser applications, the leveraging of artificial intelligence technologies, the semantic web, the Geospatial web, or the 3D web. Web 3.0 is a web where the concept of website or webpage disappears, where data isn't owned but instead shared, where services show different views for the same web/the same data. Those services can be applications (like browsers, virtual worlds or anything else), devices or other and have to be focused on context and personalization and both will be reached by using vertical search. One could speculate that the Google/Sun Microsystems alliance to create a web based operating system for applications like word processing and spreadsheets is an early indicator of this trend. In short Web 3.0 is a semantic web and is a read, write and execute web. It has now trillions of users. It connects knowledge and is understanding itself. It runs through micro-networks and cloud computing gives enormous possibilities to it.

Social networking can be seen as the soft face of Internet technology. Web 3.0, however,

allows a more focused use of information, linking data across a wide variety of platforms and making it accessible and meaningful for users by making it easily understandable to machines. Today's technology allows users to access, adapt, reconfigure and utilize this to meet their unique requirements. There has never been a better time to do work, at least for individuals and firms who are comfortable with the creative use of existing and emerging technologies (2013).

### **3. Lasting Importance of Web 2.0 to Libraries**

Web 2.0 tools have enabled the web to evolve into read/write environment which allows people to create, change and publish dynamic contents of all types. Web 2.0 is seen as the second generation of the Web. Few applications and tools of Web 2.0 includes: blogs, wikis, social bookmarking, YouTube, Pinterest, RSS feed, social networking, collaborative editing tools (Wikis), Twitter and many more. Libraries are among the early adopters of the social media which they used to connect with their patrons for various types of information services and communication. Libraries are acting very much like community hubs in this networked world just as they were in the their customary environment. Modern libraries cater the information needs of a more demanding and tech-savvy new generation of user groups who prefer to reside in an open, self generated online environment largely supported by Web 2.0 technologies. For reaching the users; where they are, the libraries need to revamp their service strategies by incorporating tools like blogs and online social networks (Hanif, 2009). Blog can act like a handy technology for library professionals. It can be reshaped as an information and publicity tool, as a feedback instrument, as an interactive and collaborative learning medium and as a facility for library publicity and promotion. Online social networks connect like-minded people who share information, ideas and

feelings. The experience of an academic library in India shows that reaching the user at their own time and space is more easy and productive when we adapt new web technologies (Faisal, 2009).

### **4. Significance of the Study**

Numerous applications of Web 2.0 are highly relevant to library and information service sector than in any other field. So they are still used along with Web 3.0 tools in libraries. The present study is restricted within Web 2.0 tools. It is intended to provide a snapshot of prevalence of various Web 2.0 tools and their implementation in Indian Libraries in the present day. For this the study has assessed the popularity of different Web 2.0 tools in covered libraries. The results of this study can better help and inform library stakeholders about the types of Web 2.0 tools currently used in Indian libraries and encourage more organizations to adopt these technologies. Consequently, library stakeholders are also expected to better appreciate how Web 2.0 tools can be harnessed to improve the overall quality of their websites. Such an understanding can enable libraries to better plan, manage and procure resources to support their Web 2.0 efforts. This would include ICT infrastructure as well as the human resources needed to impel these initiatives. Further, by identifying suitable Web 2.0 tools, appropriate policies for their use may also be crafted.

### **5. Research Questions**

Many previous studies have extensively explored the individual capabilities of Web 2.0 such as, Blogs, Wiki, RSS feeds, and social networking sites. Much work has not been done to examine the extent to which Web 2.0 has been implemented in Indian libraries. Also, how and for what and what functions Web 2.0 tools have been used to support library and information services remains unexplored. The field however is lacking a comprehensive review and comparison of

these individual functionalities like Blogs, wiki, RSS feeds, and social networking sites; holistically and like that are used the most and the least, as well as a succinct overview of the current state of Web 2.0 tools in the different categories of libraries in India. The type of review the present study attempts is important because they relate the Web 2.0 tools and different functionalities of library and information systems. Different functionalities are designed to achieve different organizational objectives (Kim & Abbas, 2010). In this context the the present study is guided by the following research questions:

- What are various Web 2.0 tools that have been implemented in Indian libraries?
- Which types of libraries are using Web 2.0 tools or propose to use these tools?

### **5.1 Objectives of the Study**

On the basis of the above research questions following objectives are formulated for the study:

- To identify the libraries that are applying Web 2.0 tools.
- To examine how many Web2.0 tools are being implemented by the libraries.
- To find out various Web 2.0 tools being applied by the libraries.
- To find out the prevalent Web 2.0 tools in different types of libraries.

### **5.2. Methodology Used**

A quantitative approach has been found appropriate for the current study. The study used the data collected through the content analysis of concerned websites. The data collected was analysed with a view to provide descriptive statistics on the implementation of Web 2.0 tools in select Indian libraries. Recommendations evolved and conclusion are presented based on this.

### **5.3. Research Sample**

The libraries taken as sample for the study

need to have a working Web site. Not all school, college, university and special libraries were covered in this study. For defining the sample size, the researcher used purposive sampling method by the way of focusing and discovering the libraries that are using Web 2.0 tools. The sample size was decided based on three parameters. First, a review of literature was conducted and suggestive list of libraries that have deployed Web 2.0 tools was prepared based on the review. Second, search was performed to find out how many Central Universities, Indian Institute of Technologies (IITs) and Indian Institutes of Management (IIMs) have implemented Web 2.0 tools in their libraries. UGC website [ugc.ac.in](http://ugc.ac.in) was referred in order to get names of all the Central Universities of India. In all, there are 55 Central Universities. The web site of each university has been analyzed for Web 2.0 applications in their libraries. It was identified that there were nine universities using Web 2.0 tools in their libraries. Further, the websites of all 19 Indian Institutes of Managements were browsed. It is worth to mention that out of 19 IIMs, only 7 are old IIMs rest of the IIMs are very new. So websites of those 7 IIMs were browsed closely and 2 IIMs: Indian Institute of Management – Indore and Ahmadabad were selected for the study as these being the oldest among the seven. Additionally, the websites of all 19 Indian Institutes of Technology were also brought into the scanner and it was found that 13 IITs were using Web 2.0 tools. Thus, these 13 IITs were selected for the study. By now, it was gauged by the researcher that the special libraries were using Web2.0 tools single long. However, the third parameter for deciding the sample was to subscribe and follow the discussion forums such as, CorporateLibrns which is an interactive forum for corporate librarians and LIS-Forum. The researcher started to browse the web site of the libraries about which the discussion relevant to the present research topic was performed in the discussion forums. In this process it was

found that, besides IITs, IIMs, and Central Universities, several special and college libraries were also using Web 2.0 tools.

As far as school libraries are concerned, the researcher found through discussion forums that several libraries of Kendriya Vidyalaya are in the process of implementing Web 2.0 tools. Thus, the web sites of several libraries of Kendriya Vidyalaya were visited in order to find out the libraries that are using Web 2.0 tools. Based on this evaluation the researcher compiled a list of 53 libraries of Kendriya Vidyalayas (Schools) which were using some form of Web 2.0 tools. The data on the selected libraries used as sample for this study are given in Table 1. The list of selected libraries for the purpose of data collection is given in Annexure 1

**Table 1: Selected Libraries**

Type of Library	Number
Special	25
University	09
College	02
School	53
Total	89

#### 5.4. Data Collection Method

As stated above the data was collected through analyzing the library websites of the samples selected for visible Web 2.0 tools.

#### 6. Content Analysis of Library Websites

Websites forms a valid subject of content analysis. Content analysis is a process that involves summarizing texts, images, maps, numerical records or other meaningful matter, with a view to the transform non-quantitative documents into quantitative data (Cohen et al., 2007). Websites are now becoming one of the main types of material subjected to content analysis (Han and Liu, 2010). Content analysis of websites libraries selected as sample was undertaken in the

current study in order to produce quantitative data on the implementation of Web 2.0 tools and their purposes. A draft checklist of all Indian Institute of Technologies (IITs), Indian Institute of Management (IIMs) and Central Universities of India was prepared along with the names of currently used Web 2.0 tools. The website of each of these libraries were visited and analyzed for the purpose of identifying Web 2.0 tool implementation in the concerned organizations. Web sites analysis involved a number of key procedures evolved during earlier studies and as specified experts (Linh, 2008). The following are the processes involved in the present study:

Careful analysis of library homepages and sitemaps for visible presence of Web 2.0 tools and their purposes.

Accessing library information, online services, electronic resources, help, and other pages of the sample organizations. Examining the links such as news, events, activities, services, etc to see the availability of RSS, blogs, IM, Facebook, Twitter, Google+, Pinterest, LinkedIn, ResearchGate, Podcast and Wikis. Examining other relevant second, third and fourth level web pages.

Using the built in search functionality of library web pages to find evidence of the implementation of relevant Web 2.0 tool applications. Search for words or phrases such as RSS, Blog, library blog, instant messaging, chat, podcast, vodcast, wiki. This step has enabled researcher to identify the applications of Web 2.0 even if they do not have links in the home pages or the second-level sub-pages of the library web sites.

Using Google search for libraries that do not give a search box on their web sites to navigate within the libraries' web site domain by following the syntax: keyword site : www.domainname. For example, to see whether the library of Central University of Kerala uses RSSfeeds or not, the following

search expression was used: RSS site: www.cukerala.ac.in. The first ten links in the search outcomes typically provided the answers as specified in an earlier study (Linh, 2008).

Used Google search as suggested by Linh to search for the libraries, blogs, facebook pages, YouTube videos, Podcast, Pinterest that hosted by free domain names instead of the libraries domain names (Linh, 2008).

After visiting library’s websites of the samples selected for the study, final checklist comprising of 13 IITs, 2 IIMs and nine Central Universities was prepared along with the names of Web 2.0 tools these libraries were using. Further, the researcher kept adding more special libraries, college libraries, school libraries to this list after ascertaining about their usage of Web 2.0 tools through their web sites. Thus, over all, list consisting of 89 libraries was prepared comprising of 34 special, 2 college and 53 school libraries. Data collected was quantified and entered into a Microsoft Excel spreadsheet.

### 7. Data Analysis and Interpretation

Descriptive analysis describes the distribution frequencies of responses; analysis involves the examination across cases of one variable at a time (Williams, 2003 and Trochim, 2006). In the present study, descriptive statistics were used to present the information gained from the research instrument, that is, content analysis. Descriptive analysis is largely the study of distribution of one variable.

This sort of analysis may be in respect of one variable i.e unidimensional analysis, or in respect of two variables i.e. bivariate

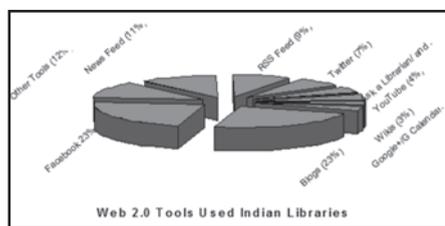


Figure 1: Web 2.0 Tools Used in Indian Libraries

analysis or in respect of more than two variables which is described as multivariate analysis. The purpose of descriptive statistics is to describe or summarize data obtained quantitatively, in a meaningful way. Descriptive statistics are the most commonly used form of data analysis in library and information science (Powell and Connaway, 2004). For the present study, frequency distribution method was used to interpret data collected through content analysis.

### 7.1. Number of Web 2.0 Tools implemented by Libraries

By analyzing the web sites of several Indian libraries, it was found that overall 89 select libraries comprising of special, college, university, and school libraries are using one or more Web 2.0 tools (see Table 1). The analysis was performed as below to identify the types of Web 2.0 tools in Indian Libraries.

Table 2 is frequency distribution table for the number of Web 2.0 tools implemented by libraries. It shows that about 45% libraries are using at least one Web 2.0 tools and

Table 2: Number of Web 2.0 Tools implemented by Libraries

Number of Web 2.0 Tools	Number of Libraries	Percentage
1	40	44.9
2	22	24.7
3	12	13.8
4	3	3.7
5	3	3.7
6	4	4.5
7	2	2.4
8	0	0
9	1	1.2
10	1	1.2
11	1	1.2
26	89	

about 25 % libraries are using two Web 2.0 tools. Only 1.2% percent all the libraries are using nine or more 2.0 tools. From the above data it can be interpreted that Web 2.0 is still a novel phenomena which is yet to be embraced by Indian Library System. Figure 2 shows this data in the form of a bar chart.

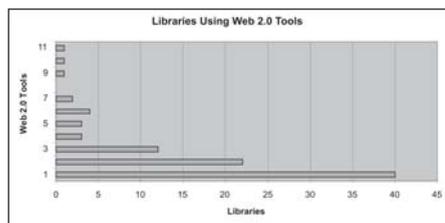


Figure 2: Number of Web 2.0 Tools Implemented by Libraries

## 7.2. Number of Libraries Using Web 2.0

Table 3 provides the number of libraries implementing various Web 2.0 tools, total number of identified tools were 26. Blogs (56%) and Facebook (50%) are the most prevalent tools in select Indian libraries, followed by RSSfeeds ( 20%), Newsfeed (24.7%), Twitter (14.6%), Instant Messaging / Ask a Librarian (11%), YouTube (9%), Google+ /G Calendar (6.7%), Library app for mobile (4.5%). Other Web 2.0 tools implemented range from 1.1-3.4% (Scoop it, Academia.Edu, Library Toolbar, G-Talk, Slideshare, Pinterest, Podcast, Flickr, Goodreads, E-Newsletter, Discussion Forums, Shelfari). These tools are least popular among the libraries.

## 7.3. Prevalence of Web 2.0 Tools in Different Types of Libraries

Table 4 compares the prevalence of Web 2.0 tools in special, University, school and college libraries. In total, 26 Web 2.0 tools were identified among all types of libraries in India. Blog and facebook are the most popular Web 2.0 tools among University libraries and school libraries, with 66.6% of all university libraries and 52.8% of all school libraries have developed blog and 55.5% of university libraries and 39.6% of school

Table 3: Web 2.0 Tools Implemented by Libraries

Type of Web 2.0 tools	Number of libraries	Percentage
Blogs	45	55.6
Facebook	44	49.4
RSS Feed	17	19.2
News Feed	22	24.7
Instant Messaging/ Ask a Librarian	10	11.2
YouTube	8	8.9
Twitter	13	14.6
Picasa	3	3.4
LinkedIn	3	3.4
Lib. App for Mobile	4	4.5
Shelfari	3	3.4
Scoop It	1	1.1
Social Bookmarking/ Tagging	2	2.3
Wikis	6	6.7
Academia.edu	1	1.1
ResearchGate	2	2.3
Library Toolbar	1	1.1
Google+ / G Calendar	6	6.7
G-talk	1	1.1
SlideShare	1	1.1
Discussion Forums	3	3.4
Pinterest	1	1.1
Podcast	1	1.1
Flickr	2	2.3
Goodreads	2	2.3
E-Newsletter	2	2.3
<b>Total</b>	<b>89</b>	

libraries have facebook account. It is interesting to note that use of Instant messaging / ask a librarian (44.4%) is better used in university libraries followed by Newsfeed (33.3%) , Library app for mobile (22.2%), ResearchGate (22.2%). However, Blog, Newsfeed, Twitter and Picasa are the most popular Web 2.0 tools among college libraries. But this result is inconsistent since only 2 college libraries were identified for the study

It has been noted school library professionals have enthusiastically developed more than one blogs for their libraries and few have developed as many as 21 blogs for their libraries. A few of school library blogs were found to offer really diverse content and services, such as new arrivals, article alert service, Information Literacy video, e-resources, document delivery services, Photo sharing etc. In case of school libraries, use of Newsfeed (28.3) is better, followed by

**Table 4: Prevalence of Web 2.0 Tools**

Type of Web 2.0 tools	Special		University		School		College	
	No of Libs	%	No of Libs	%	No of Libs	%	No of Libs	%
Blog	11	44	6	66.6	28	52.8	1	50
Facebook	18	72	5	55.5	21	39.6	0	0
RSS	5	20	1	11.10	13	24.55	0	0
Newsfeed	3	12	3	33	15	28.3	1	50
Instant Messaging/ Ask a Librarian	4	16	4	44.4	2	3.7	0	0
Youtube	6	24	0	0	2	3.7	0	0
Twitter	6	24	1	11.1	5	9.4	1	50
Picasa	1	4	0	0	1	1.8	1	50
Linked In	1	4	1	11.1	1	1.8	0	0
Library application for mobile	1	4	2	22.2	1	1.8	0	0
Shelfari	3	12	0	0	0	0	0	0
Scoop it	1	4	0	0	0	0	0	0
Social Bookmarking	1	4	0	0	1	1.8		0
Wikis	4	16	1	11.1	1	1.8	0	0
Academia Education	0	0	1	11.1	1	0	0	0
Research Gate	0	0	2	22.2	0	0	0	0
Library Toolbar	1	4	0	0	0	0	0	0
Google+ /G Calendar	1	4	1	11.1	3	5.6	1	50
G Talk	1	4	0	0	0	0	0	0
Slideshare	1	4	0	0	0	0	0	0
Discussion Forums	1	4	0	0	2	3.7	0	0
Pinterest	0	0	1	11.1	0	0	0	0
Podcast	0	0	1	11.1	0	0	0	0
Flickr	1	4	0	0	1	1.8	0	0
Goodreads	0	0	0	0	2	3.7	0	0
Newsletter	0	0	0	0	2	3.7	0	0

RSS feed (24.5%), Twitter (9.4%), Instant messaging/Ask a librarian (3.7%), YouTube (3.7), discussion forums (3.7%), Goodreads (3.7%).

It was noted that 72% of special libraries maintain Facebook page, making Facebook most widely implemented tool among special libraries. Blog (44%), YouTube (24%), Twitter (24%) and RSS (20%), Wikis(16%), Newsfeed (12)%, Shelfari (12%) are the next most popular technologies among special libraries.

However, the least used tools among special libraries are: Picasa (4%), LinkedIn (4%), Libray app for mobile (4%), social bookmarking (4%), slide share (4%); among university libraries are: RSS (11.1%), Twitter (11.1%), LinkedIn (11.1%) Academic.edu (11.1%); and among school libraries are: Picasa (1.8%), LinkedIn (1.8%), Library app for mobile (1.8%), social bookmarking (1.8%), Wikis (1.8%).

Prevalence of Web 2.0 tools among special libraries are that out of 26 tools 19 are being used. Among school libraries out of 26 tools 17 are being used. Among university libraries out of 26 tools 14 are being used. After viewing the blogs, facebook and other Web 2.0 tools of selected libraries, it was found that school libraries were found to be passionate users of variety of Web 2.0 tools and have experimented a lot with it.

## 8. Major Findings

Important findings of the study based on the content analysis of the websites of the libraries selected as samples that are using Web 2.0 tools are the following.

Regarding number of Web 2.0 tools implemented by libraries, about 45% libraries are using at least one Web 2.0 tools and about 25 % libraries are using 2 Web 2.0 tools.

Regarding implementation of various Web 2.0 tools in libraries, Blogs (56%) and facebook (50%) are the most prevalent tools

in select Indian libraries, followed by RSS feed (20%), Newsfeed (24.7%).

Regarding prevalence of Web 2.0 tools in different types of libraries, it was found that Blog and Facebook are the most popular Web 2.0 tools among university libraries and school libraries.

It has been noted that school library professionals are enthusiastically developing more than one blogs for their libraries and few have developed as many as 21 blogs for their libraries.

Regarding prevalence of Web 2.0 tools in different types of libraries, It was noted that 72% of special libraries maintain Facebook page, making Facebook most widely implemented tool among special libraries.

Prevalence of Web 2.0 tools among special libraries is that out of 26 tools 19 are being used. Among university libraries out of 26 tools 14 are being used. Among School libraries (out of 26 tools 17 are being used).

After viewing the blogs, facebook and other Web 2.0 tools of selected libraries, it was found that school librarians were found to be passionate users of variety of Web 2.0 tools and have experimented a lot with it.

## 9. Conclusion

Content analysis of Indian library websites was undertaken in the current study in order to produce quantitative data on the implementation of Web 2.0 tools in Indian librarians and their purposes. The data collected and analysed has proved that Web 2.0 technologies are being used in library settings all over the world. Also, the literature on Web 2.0 application in libraries reveals that the prevalence of different Web 2.0 tools varies among different regions and types of libraries in India also as found in numerous studies from India and abroad (Han & Liu, 2010; Chua & Goh, 2010).

It was interesting to note that functionalities and applications of the Web 2.0 sphere are constantly evolving, and the prevalence of

Web 2.0 tools in libraries is also likely to undergo frequent changes. It was found that overall 89 selected libraries comprising of special, college, university, school are using one or more Web 2.0 tools. The analysis performed identified the types of Web 2.0 tools in Indian Libraries. Results presented above (Table 2) show that almost half of the selected libraries are using at least one Web 2.0 tools and one-fourth are using two Web 2.0 tools. Further, the results (Table 3) identified that there were in total 26 Web 2.0 tools implemented in the selected libraries in India. Blogs and facebook were the most prevalent tools in selected libraries. The tools such as, Scoop it, Academia.Edu, Library Toolbar, G-Talk, Slideshare, Pinterest, Podcast, Flickr, Goodreads, E-Newsletter, Discussion Forums, and Shelfari were the least popular tools. Further, the study compared (Table 4) the prevalence of Web 2.0 tools in special, University, school and college libraries. Blog and Facebook are the most popular Web 2.0 tools among university libraries and school libraries. It was also found that school library professionals were enthusiastically developing more than one blogs for their libraries and few have developed as many as 21 blogs for their libraries. Also, most of the special libraries are found to be having facebook pages and are also maintaining blogs.

As revealed by the study Web 2.0 tools have helped librarians to offer upto date and efficient services as well as to extend services to the location of the user through WWW. The emerging Web 3.0 is very fast, and the desires and expectations from the ICT have already started materializing in this generation of web. In Web services use of dynamic content, blogs, social networks, tagging, wikies, podcasts and mashup technologies were common applications but information is scattered and unorganized all over the web. Now, web 3.0 will prominently be based up on the librarians, for organizing this scattered or unorganized information. The application of semantic technologies

and ontologies will be the key aspects in this generation of web. The semantic wave embraces three stages of internet growth. The first stage, web 1.0, was about connecting information and getting on the net. Web 2.0 is about connecting people putting the 'I' in user interface, and the 'we' into a web of social participation. The next stage, web 3.0, is in its initial stage. It is concerned mainly with representing meanings, connecting knowledge, and putting them to work in ways that make our experience of internet more relevant, useful, and enjoyable (Naik and Shivalingaiah 2008). The use of web services and tools will allow libraries to improve their online resources, which will ensure that library services remain relevant to the communities it serves. Web 3.0 offers unlimited possibilities to librarians if its power can be properly harnessed.

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## Annexure 1

### List of Sample Libraries Selected for the Study

#### Special Libraries

Indian Institute of Technology, Delhi  
 Indian Institute of Technology, Bhubneswar  
 Indian Institute of Technology, Bombay  
 Indian Institute of Technology, Gandhinagar  
 Indian Institute of Technology Jodhpur  
 Indian Institute of Technology, Madras  
 Indian Institute of Technology, Hyderabad  
 Indian Institute of Technology, Indore  
 Indian Institute of Technology, Kharagpur  
 Indian Institute of Management, Ahmadabad  
 Indian Institute of Technology (BHU), Varanasi  
 Indian Institute of Technology, Kanpur  
 Indian Institute of Technology, Ropar  
 Indian Institute of Management, Indore  
 Indian Institute of Management, Ahmadabad  
 Centre for Women Studies' and Development (under ICSSR), New Delhi  
 Gokhale Institute of Politics and Economics, Pune  
 Indian Institute of Astro Physics, Bangalore  
 Inter-University Centre for Astronomy and Astrophysics, Pune  
 Raman Research Institute, Bangalore  
 Physical Research Lab, Ahmadabad  
 HELP (Health Education Library for People), Mumbai  
 Jaypee University of Information Technology

Solan

Jaypee Institute of Information Technology, Noida

J N Medical College, Aligarh Muslim University

#### University Libraries

Banaras Hindu University, Varanasi  
 Babasaheb Bhim Rao Ambedkar University, Lucknow  
 Tezpur University, Tezpur, Assam  
 Assam University, Silchar, Assam  
 Central University of Kerala, Kasaragod, Kerela  
 Central University of Hyderabad, Hyderabad, Telangana  
 Jamia Millia Islamia University, New Delhi  
 Central University of Gujarat, Gandhinagar, Gujrat  
 Jawaharlal Nehru University, New Delhi

#### College Libraries

Nagindas Khandwala College Mumbai  
 Gokhale Education Society's Arts, Commerce and Science College, Shreewardhan, Raigad

#### School Libraries

Kendriya Vidyalaya, ZIET Mysore  
 Kendriya Vidyalaya No.2, Calicut  
 Kendriya Vidyalaya, Vijayawada  
 Kendriya Vidyalaya Kanjikode  
 Kendriya Vidyalaya No. 2 Kasaragod  
 Kendriya Vidyalaya, Madurai  
 Kendriya Vidyalaya, Lonavla

- Kendriya Vidyalaya No2 AFS Pune  
 Kendriya Vidyalaya Gopalpur  
 KendriyaHYPERLINK “http://  
 www.kvclrichennai.tn.nic.in/”  
 HYPERLINK “http://  
 www.kvclrichennai.tn.nic.in/  
 ”VidyalayaHYPERLINK “http://  
 www.kvclrichennai.tn.nic.in/”, CLRI,  
 Chennai  
 Kendriya Vidyalaya No. 3, Bhopal, M.P  
 Kendriya Vidyalaya Indrapura  
 Kendriya Vidyalaya Jharsuguda  
 Kendriya Vidyalaya Tinsukia  
 Kendriya Vidyalaya no.2 Tirupati  
 Kendriya Vidyalaya ZIET Bhubaneswar  
 Kendriya Vidyalaya C.R. Manmad  
 Kendriya Vidyalaya NTPC Dibiyapur  
 Kendriya Vidyalaya, INS Kalinga,  
 Bheemunipatnam, Visakhapatnam  
 Kendriya Vidyalaya, Mahuldiha, Rairangpur  
 Kendriya Vidyalaya Raebareli, U.P  
 Kendriya Vidyalaya, Latehar  
 Kendriya Vidyalaya, Ganeshkhind, Pune  
 Kendriya Vidyalaya, Bhubaneshwar  
 Kendriya Vidyalaya, Eklinggarh, Udaipur  
 Kendriya Vidyalaya No. 2 GCF, Jabalpur  
 Kendriya Vidyalaya BSF Pokaran (Jaisalmer)  
 KendriyaHYPERLINK “http://  
 www.kvchhatarpur.edu.in/” HYPERLINK  
 “http://www.kvchhatarpur.edu.in/  
 ”VidyalayaHYPERLINK “http://  
 www.kvchhatarpur.edu.in/” HYPERLINK  
 “http://www.kvchhatarpur.edu.in/  
 ”Chhatarpur  
 Kendriya Vidyalaya Thrissur  
 Kendriya Vidyalaya A. R.C, Doomdooma  
 Kendriya Vidyalaya, Air Force Station,  
 Hakimpet, Secunderabad  
 Kendriya Vidyalaya, Mau, U.P  
 Kendriya Vidyalaya, Ahmadabad Cantt  
 Kendriya Vidyalaya, Srikakulam  
 Kendriya Vidyalaya 1STC Jabalpur  
 Kendriya Vidyalaya Pattom  
 Kendriya Vidyalaya IIT Kharagpur  
 Kendriya Vidyalaya , Etah, U.P  
 Kendriya Vidyalaya, Khairagarh  
 Kendriya Vidyalaya No-2 (Army), Jodhpur  
 Kendriya Vidyalaya, NTPC, Kaniha  
 Kendriya Vidyalaya Sangathan RO Tinsukia  
 Kendriya Vidyalaya ONGC Mehsana  
 Kendriya Vidyalaya Bareilly  
 Kendriya Vidyalaya Air Force Station Bareilly  
 Kendriya Vidyalaya Jabalpur VF  
 Kendriya Vidyalaya, Command Hospital,  
 Kolkata  
 Kendriya Vidyalaya, Bolpur  
 Kendriya Vidyalaya RCF, Lalganj  
 Kendriya Vidyalaya, Silvassa  
 Kendriya Vidyalaya, Haflong  
 Kendriya Vidyalaya, Churu  
 Kendriya Vidyalaya, Adra, Purulia