

## Use of web 2.0 tools in libraries: A case study

**Murad Hussain Shah**

*Professional Assistant*

*Central University of Kashmir*

### 1. Introduction

The continuous and rapid advancements in Information Communication Technologies (ICT) have caused massive and rapid alterations across all human social activities (**Torero & Braun, 2005**). The development in ICT has facilitated the accessing, transmitting and storing information (**Lopez, 2005**). ICT offered new opportunities for the development of new services and improved quality of life (**Moodley, 2004**). The result of these electronic activities made the current era known by the information era and made individuals or social actors live in Information Societies (**Moodley, 2004**).

The dramatic advances in technologies, particularly in Internet technologies have changed the way individuals seek and obtain information, as result it changed the learning environments (**Meshal, 2007**). The emerging of new programming languages for the web such as: Java and XML and the integration of it such as: asynchronous Javascript and XML (AJAX) (**Ritchie, 2007**) has promised new transformation for more dynamic web applications (**Jazayeri, 2007**) and more interactive between online users. This current shift in web technologies is commonly under a sobriquet for several of online activities known currently by Web 2.0 (**Maness, 2006**).

The last two decades have witnessed the rapid transformation of the library in applying information technology. Libraries have developed and diversified their services based on advanced information communication technologies. A typical technology is Web 2.0 which has recently emerged as a second generation of web-based technologies for communication. Web 2.0" was reportedly first conceptualized and made popular by Tim O'Reilly and Dale Dougherty of O'Reilly Media in 2004 to describe the trends and business models that survived the technology sector market crash of the 1990s (**O'Reilly, 2005**). The companies, services and technologies that survived, they argued, all had certain characteristics in common; they were collaborative in nature, interactive, dynamic, and the line between the creation and consumption of content in these environments was

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

This characterization of the current state of the Web is at times contended, and though the clear delineation between the first and second Webs is here admitted to be rather arbitrary, it still must be recognized that the Web is indeed evolving into a more interactive, multi-media driven technological space. As **O'Reilly (2005)** observes in what is often cited as the seminal work on Web 2.0, personal web-pages are evolving into blogs, encyclopedias into Wikipedia, text-based tutorials into streaming media applications, taxonomies into “folksonomies,” and question-answer/email customer support infrastructures into instant messaging (IM) services.

## **2. Problem**

Web 2.0 has been strongly applied in the field of e-commerce, online advertising and other online services. However, it has not been a widely applied technology in the library community. Such technologies have just created a new wave of technological applications in libraries, and also attracted the attention of researchers, scholars and the library community.

The implications of this revolution in the Web are enormous. Librarians are only beginning to acknowledge and write about it, primarily in the “biblioblogosphere” (weblogs written by librarians). Journals and other more traditional literatures have yet to fully address the concept. There is little research that focuses on the impact and applications of web 2.0 in the libraries. The current study was under taken to explore use of web 2.0 tools in libraries.

## **3. Scope**

The present study was confined to twelve national libraries from 12 developed countries and to following web 2 tools

1 RSS

2 Blogs

3 Podcasts

4 Instant Messaging (IM)

#### **4. Methodology**

The exploratory study was taken by means of literature review and investigation of web sites of 12 national libraries. The instrument in form of a checklist was used to collect data for the research. The development of the checklist was adapted from and based on various checklists, questionnaires, and synthesized ideas from literature.

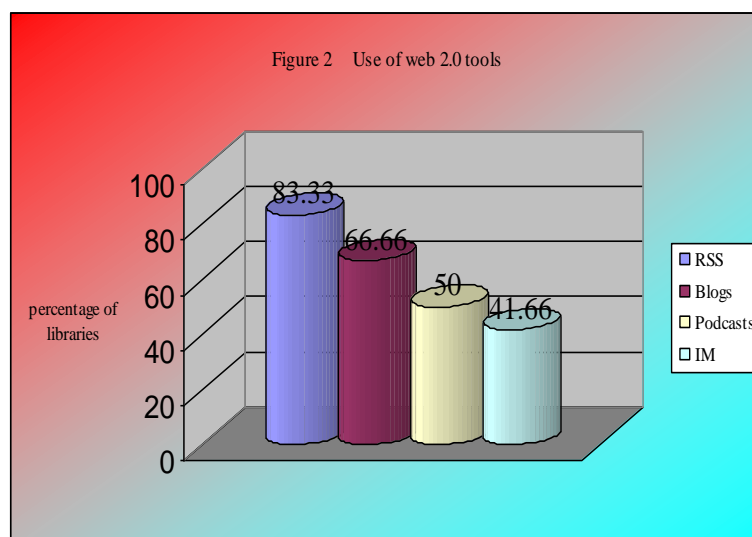
#### **5 . Results and Discussions**

As mentioned earlier twelve national libraries that use web 2.0 were selected for case study. The data was collected by means of checklist. Based on data collected from the checklist, statistical techniques were used to analyze data. The checklist was converted in to Microsoft Excel spreadsheets. Each checkpoint in the checklist was assigned a value either 1 or 0 (yes or no answers). These values were input directly in a spreadsheet and then the "SUM" function of Excel was used to calculate the overall weighting, types, purposes and features of Web 2.0 technologies in the libraries.

Figure 2 shows the use of web 2.0 tools. It could be seen that RSS (83.66 percent) was the most commonly used technology while IM was the least used one with only five libraries (41.66 percent). The popularity of RSS may be due to its clear function, simplicity and easiness. As various researchers affirm RSS has been one of the most utilized technologies as it enables users to create a one-stop-shop of information. Users can easily and flexibly subscribe to information that meets their needs. On the contrary, IM was the least used even though it is a good technology for the library to implement virtual reference services. The reason is that such a technology requires librarians to be always online to support users. Therefore, some libraries possibly did not employ it because of a lack of library staff.

More than 65 percent of libraries (8 out of 12) utilized blogs and half of libraries employed podcasts. Blogs were the second most common used Web 2.0 technology in national libraries because of its benefits. Some notable advantages of blogs are that libraries can use cheap or free software, and blogs require a minimal maintenance and staff's time. Additionally, blogs allow library users to freely exchange ideas on different library topics that traditional publications or services cannot offer. Besides, the number of libraries that used podcasts is modest. The reason possibly is podcasts require libraries to have sound recorders, accompanying equipment as well as soundproof rooms. Also, the audio files are normally quite large for users to download or listen to online

### 5.2 Purposes of the use of Web 2.0



#### 5.2.1 Purposes of RSS

Table II provides the number of libraries that used RSS for different purposes. The primary purpose of RSS was “new books” (66.66 percent). Most of these libraries used RSS for new books in specific fields or subjects. Only a few of them used RSS for all new books and Less than a half of libraries applied RSS for “new e-journals” and 58.33 percent used RSS for “library news and events”.

Not many libraries used RSS for “general news” because users can access freely news web sites such as BBC, CNN for general news without depending on libraries.

“Custom catalogue search” feed is a subset of “new books” or “new journals” feeds that defines a specific set of new items being input into the library catalogue systems. This is very useful for users to keep up-to-date with new items in libraries based on their defined search expressions (the searches that are implemented previously). However, it was not widely used by libraries. The only library which used RSS for “custom catalogue search” was National library of Australia.

Besides the above purposes, some libraries used RSS for “other” purposes such as new web site introduction and new library staff, institutional repository newsletters, notices on nearly due items, overdue items and availability of inter-loan items.

<i>S.No.</i>	<i>RSS used for</i>	<i>No. of libraries using RSS for this purpose</i>	<i>Percentage of libraries using RSS for this purpose</i>
1	New books?	8	66.66
2	New e-journals?	5	41.66
3	Library news and events?	7	58.33
4	Others?	3	25.00
5	General news?	3	25.00
6	Custom catalogue search?	1	8.33

Table II Purposes of RSS use

### **5.2.2 Purposes of blogs**

Table III shows the list of purposes of blogs use. More than a half of libraries used blogs for “library services” and a similar percentage of libraries used blogs for “library news and events”. These were the two main purposes of blogs that enabled library users to be aware of library services such as opening hours, borrowing services, and questions and answers relating to library services. As discussed earlier, many libraries used RSS for “library news and events”. Thus, “library news and events” is one of the main purposes of Web 2.0 application.

Only 25 percent of libraries used blogs for “new books””. Libraries might prefer RSS for “new books” to blogs as 66.66 percent of libraries using RSS vs. 25.00 percent of

libraries used blogs for this purpose. Possibly, library users normally required to know what new books were in the libraries instead of looking for comments on new books.

33.33 percent of libraries used blogs as a tool for “information literacy” and “general information”. “Information literacy” usually focused on library courses and seminars in order to help library users to improve their searching, studying and information skills. Besides this, “general information” was normally organized in “web sites” or “links” category that led users to internet sources.

“Book reviews” and “suggestions” were not common purposes of the library blogs. Some libraries used blogs for book reviews such as Library of Congress, National library of Norway and National library of Singapore. National library of New Zealand and National Library of Czech Republic also had categories in their blogs for users to suggest new ideas in order to improve library services.

<i>S.No.</i>	<i>Blogs used for</i>	<i>No. of libraries using blogs for this purpose</i>	<i>Percentage of libraries using blogs for this purpose</i>
1	Library services?	8	66.66
2	Library news and events?	8	66.66
3	New books?	3	25.00
4	Information literacy?	4	33.33
5	General information?	4	33.33
6	Suggestions?	3	25.00
7	Book reviews?	2	16.66

Table III Purpose of blogs use

### **5.2.3 Purposes of podcasts use**

As Table IV shows, the top three purposes of podcasts were “advice on library skills”, “guidance with resources” and “library orientation tours”. It is notable that these are not easy to present in text or other media. Therefore, audio files (podcasts) are one of good ways to help library users be familiar with general library skills, library resources and

library environment. Audio files are usually large hence library podcasts did not focus on purposes/services that can be presented by other Web 2.0 technologies (blogs, RSS). As a result, not many library podcasts were used for “library news” and “book reviews”. Also there were no podcasts for “general information” because users could look for such information in news web sites.

Some libraries used podcasts as step-by-step guidance for library users to search for information on the internet or library catalogues. Podcasts are useful because they do not require users to read a number of pages. Instead, they listen to podcasts and follow instructions.

Some libraries used podcasts for other purposes such as special library services for people with disability (Library of Congress and National Library of Canada). Such podcasts are very useful for visually disabled people.

<i>S.No.</i>	<i>Podcasts used for</i>	<i>No. of libraries using podcasts for this purpose</i>	<i>Percentage of libraries using podcasts for this purpose</i>
1	Advice on library skills?	6	50.00
2	Guidance with resources?	4	33.33
3	Library orientation tour?	5	41.66
5	Others	2	16.66
6	General searching skills?	3	25.00
7	Searching the library catalogue?	5	41.66
8	Library news?	1	8.33
9	Book Reviews?	0	0.00
10	General information?	0	0.00

Table IV Purpose of podcasts use

### 5.2.4 Purposes of instant messaging use

Table V presents the purposes of IM use. It is clear that IM was mostly used as a tool for virtual reference services in terms of chat services. IM is an integral tool for reference services and at least 75 percent American libraries use IM for their reference services. However, as Figure 2 shows, IM was the least used in comparison with other Web 2.0 technologies. Only 33.33 percent of national libraries used IM for reference services. Modest numbers of libraries used IM for other purposes such as “guidance with resources” and “advice on library services” (8.33 and 16.66 percent, respectively).

S.No.	IM used for	No. of libraries using IM for this purpose	Percentage of libraries using IM for this purpose
1	Reference services?	4	33.33
2	Guidance with resources?	1	8.33
3	Advice on library services?	2	16.66

Table V Purpose of IM use

## 6. Conclusion

Libraries make use of collaborative tools and technology to engage and share information rather than just provide it. Blogs, wikis, RSS feeds, and instant messaging are changing the traditional library functions of indexing, cataloging and information dissemination. The greatest impact of these tools is visible in the areas of information access and delivery. From “push” information, we are moving towards “pull” information and beyond. Libraries today utilize wikis and RSS feeds to deliver library news and catalog updates; they also solicit patrons’ feedback and participation in the form of blog comments and the ability to alter existing information. The nature of library-related functions is therefore becoming collaborative and flexible as users become active participants.

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