

# Web 2.0 in LIS Curriculum :A Preliminary Study

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## Abstract

*LIS schools today face a greater challenge in updating their curriculum to accommodate the new technological innovations, necessitated by the market demands. Web 2.0 applications have not only transformed the nature of scholarly communication but is constantly reshaping the ways in which users search, find, access and utilize the information with the help of tools facilitated by open source software and user friendly web programming languages including AJAX. This preliminary survey shows how well the latest technologies are getting embedded into daily library services for the benefit of users and the feasibility of their coverage in LIS curriculum, with reference to Mumbai libraries. Practicing librarians are struggling everyday to keep themselves up-to-date with new Web 2.0 resources and utilities, to implement the same in their personal and professional work domains and hence expect the fresh graduates to be skilled with requisite technical competency to meet the challenges of the growing market demands. As for the LIS schools, bridging the gap between traditional librarianship and modern technologies will forever be a challenging issue.*

**Keywords:** Web 2.0, LIS Curriculum, Professional Competencies, Syllabus Revision, Scholarly Communication

## 1. Introduction

It is indubitable that the information landscape is constantly restructured by the technological, social and cultural factors. Technologies affect the way we seek, locate, access and use information. In the current scenario the services of a contemporary library are gradually adapting to embedded Web 2.0 technology, reiterating the arrival of Library 2.0. The recent literature abundantly reflects the experiences and views of many a librarians and technology experts about various applications, tools, utilities and problems of Web 2.0. Interestingly, it is also noteworthy that most of this literature initially emerged through informal communication channels rather than journal articles and books. These informal channels are

mostly Web 2.0 tools and have thereby facilitated the development of technology simultaneously. The journal articles and books on Web 2.0 and Library 2.0 that followed, contain citations of the many blogs, Wikis and discussion forum sites through which initial contributions were made towards development of the concept. Ian Davis (2005) explicitly proves the significance of Web 2.0 tools in the modern scholarly communication process by recommending that “the best way to follow development (of Web 2.0) is on the blog”.

Moreover the fact that technology is ever-evolving has a direct bearing on library practices and subsequently on LIS Education. Consequently, Library Schools have to periodically undergo the rigorous work of curriculum revision and in the process try to maintain pace with technological innovations. With this in the background, the



Department of Library & Information Science, University of Mumbai attempts to look at the current needs of the market with respect to competencies of a fresh Library Science graduate and the feasibility of fulfilling the increasingly growing expectations of their prospective employers through a preliminary study of the opinions of a selected group of librarians in Mumbai.

The present study aims (1) to study the meme map of Web 2.0, created by O'Reilly; (2) to find the extent of application of Web 2.0 tools in libraries and (3) to study the feasibility of inclusion of the topic in LIS syllabi.

## **2. What is Web 2.0**

The concept of Web 2.0 was introduced by O'Reilly in 2004 in a conference. Since then a series of annual summits held by the Web 2.0 community for discussing "challenges, opportunities, business models and leaders in the Internet economy", has proven, year after year, the escalating power of technology, web 2.0 in particular. In the latest summit, the hidden potential of the "social movement" led to inclusion of "leaders in the fields of healthcare, genetics, finance, global business, ... even politics"(1)

Web 2.0 has been described by most authors like Virkus, Conole, Maness, Miller in terms of its characteristics and applications. O'Reilly himself defined it in his seminal work (O'Reilly 2005) with the help of a meme map and comparison of tools on Web 1.0 and Web 2.0. As time has elapsed, phenomena like collective intelligence, the long tail, the end of software cycle quoted as "principles" of Web 2.0 by O'Reilly in the same article have shaped the Web to the effect of a completely user-

centered platform. Maness describes Web 2.0 as a "socially rich and communally interactive multimedia experience" based on the principle of "user-centered" application. These well attributed characteristics coupled with availability of open source software enriched the tools of Web 2.0 application by collective intelligence of people who use them. This phenomenon is popularly known as "crowdsourcing" (Jeff Howe, 2006).

## **3. Web 2.0 applications and tools in Libraries**

Based on principles of sharing, openness, collaboration, autonomy and decentralization, Web 2.0 is an opportunity to explore one's creativity with technology. Miller (2005) suggests that the opportunity be grabbed by the librarians to not only improve services in terms of promptness, accuracy and relevance but "to reach out beyond the walls and Websites of the institution", thus extending the range of services in a customized mode using these tools. Many authors have tried to group the Web 2.0 tools based upon their functionality and type of communication that they facilitate.

For the purpose of this study, Bradley's (2007) list of Web 2.0 applications was taken as a guideline to develop the list of the same for the questionnaire. In his book Bradley has grouped the Web 2.0 tools and applications into chapters :

1. "RSS
2. Weblogs
3. Podcasts
4. Start Pages
5. Social Bookmarking Services
6. Build Your Own Search Engines
7. Creating and Using Websites and Pages
8. Instant Messaging
9. Photograph Sharing Utilities

10. Miscellaneous Resources” (Bradley, 2007)

In the last group miscellaneous resources Bradley has included various resources which are cluster of many applications therefore the group was exempted from the list of the questionnaire to prevent any ambiguity.

For each application sufficient description of its utility, supported by relevant examples makes the book interesting as well as informative for any librarian who wishes to select from a wide range of Web 2.0 tools available today and develop any of them with the help of technical details given therein.

#### 4. Tim O’Reilly’s Meme Map of Web 2.0

The author has used the meme map of Web 2.0 (O’Reilly, 2005) to establish those inherent characteristics of Web 2.0. which are socially relevant rather than define it technically. They are:

##### 4.1. Democracy Prevails

Web 2.0 is “of the people, by the people and for the people”. Its earlier version Web 1.0 worked on the exclusive principle of “for the people’. However, as the platform allows users to contribute their ideas in form of not only text and numerical data, audio, video, graphics and animation files but also technological applications and tools; it may result into an explosion of applications.

##### 4.2. Applications Explosion

The World Internet Usage and Population Statistics (Internet World Stats 2008) shows that there has been 305% growth in the number of users worldwide over a period of eight years. Currently there are an estimated 1.5 billion users of Internet in the world. Considering the principles of Sharing

and Openness, as advocated by the users of Web 2.0, the collective pool of intelligence applied on an everyday basis, to modification of the tools and content of Web is so huge that there is a possibility of applications explosion in the near future. Such a situation might give rise to another bubble burst, as was predicted by Miller (Miller, 2005), shortly after the conceptual appearance of Web 2.0. The question is which specific utility, data model, application, tool, or business model of Web 2.0 culture will actually survive? It has resulted into a **discover-use-customize-throw/forget** kind of practice among users.

##### 4.3. Chaotic Transitional Phase

Experts openly question the relevance, sustainability and future of Web 2.0. (Dvorak, 2007; Miller, 2005), for the simple reason that at present it appears to be chaotic. Variety, number, ultra-customization and volatility make the Web 2.0 applications chaotic. During an informal conversation one of the librarians of a prominent research library reported failure to sort and organize different kinds of RSS feeds or keep a track of important blogs in the concerned field for lack of time to search through such utilities abundantly strewn across the Web. Excessive customization has further resulted in an increase in this number. The same information appears in too many places just because it has been customized differently by different people or covered by different databases or repository services. In addition, we cannot overlook the fact that librarians of highly specialized fields have to simultaneously manage resources in both LIS and their user’s subject of expertise. Volatility of resources acts as another deterrent in their use. We must remember that in case of Web 1.0 website owner was same as the content provider, whereas in Web 2.0 the website owner (or the service provider) is a

different person than the contributors who can vary in number also. Therefore if a service stops then the content pooled in by a number of people is lost forever.

#### 4.4. Vagueness :

The ambiguity inherent in descriptors like “trust your users”, “user behaviour”, “user experience”, “attitude” (O’Reilly, 2005) lend a hazy appearance to the growth pattern of Web 2.0. In Web 1.0 standardization prevailed and there was centralized control over who is doing what with a certain data, in contrast to “users control their own data” model of Web 2.0; which has resulted in to numerous possible permutations and combinations of data within each domain, each modeled by individual personality traits of users. Such an inconsistent and fragmented structure compels one to conclude that “They (Web 2.0 tools)...lack structured intelligence and present popular results in an ad hoc manner. Finding meaningful information can be almost impossible; most of the time, bumping into something interesting is pure luck” (Lin, 2007).

#### 4.5. Immense Potential :

As in any other democratic setup, a sustainable structure emerges out of chaos on top of a sturdy foundation of principles. Many new technologies like Ajax, JavaScript, Cascading Style Sheets (CSS), Document Object Model (DOM), Extensible HTML (XHTML), XSL Transformations (XSLT)/XML, and Adobe Flash which provide users with a rich and fun interactive experience have immense potential to act as the foundation principles of a smooth and fine-tuned future Web. Torkington (2007) gives a timeline of how Web 2.0 will grow technically and socially in the coming 15 years, however, chaos and vagueness of Web 2.0 contradict such predictions. Functional

areas like Education (Hargadon,2008), Knowledge Management (Lamont, 2007), Geographic Information (Wilkinson, 2009), are predicted to benefit tremendously from Web 2.0 technology, because these areas demand personalization and participation most.

### 5. Methodology

For the current study a questionnaire was sent through email to 15 selected librarians in the city of Mumbai. The criteria used for their selection was availability of state-of-the-art technological infrastructure in their organizational setup and the fact that they are identified as the prospective employers of students of the Department of Library & information Science, University of Mumbai. Besides that, every year Master of Library & Information Science students from the DLISc, UoM are sent for a three week Internship Programme in these selected libraries. The questionnaire was aimed at exploring :

- 1) the extent of use of a defined list of Web 2.0 applications in libraries
- 2) student competencies in handling Web 2.0 applications expected by their prospective employers.

### 6. Response

Given a time period of one week, out of 15 only 8 librarians responded after 3 repeated reminders. One more preferred to interact on phone rather than replying through mail as she found difficult to put her ideas on paper due to various reasons which will be considered for the study. Others when contacted on phone gave various reasons ranging from work pressure due to economic recession in the market to ambiguity of Web 2.0.

For data analysis, it was decided to consider only 9 responses received.

## 7. Limitations

The group of libraries selected for the study is small and a mix of research, academic, corporate and public (foreign consulate libraries) libraries. Though many students passing Bachelors Degree program find jobs in school, college and public (Indian) libraries, these types of libraries have remained out of the purview of the study chiefly because a fundamental requirement for the Web 2.0 applications is infrastructural facilities which are available only in a very few of these libraries. Due to the limited response of the librarians, it could not be ascertained in the first place as to whether librarians are actually aware of the potentials of Web 2.0 applications and tools or not.

## 8. Findings

Majority (56%) of the librarians queried are senior professionals with more than 20 years of work experience. Therefore the inputs received are believed to have been structured by a thorough understanding of the growth and development in the field rather than mere impulse of technological stress. Of the nine respondents 45% had been using Web 2.0 resources for more than 2 years whereas 22% had never used them for professional work. Some of them had reported to be using, rather experimenting with the Web 2.0 applications for personal use to devise effective ways to implement the same for rendering or enhancing library services.

The usage of Web 2.0 tools and applications had been graded as Extensively, Moderately, Rarely and Never. Chart 1 shows the no. of librarians reporting the extent of each application in their respective libraries, of which RSS feeds and content creation

through 'Wikis' and websites is most extensively used. On an average moderate usage was reported for blogs. As for social bookmarking and developing one's own search engine librarians did not seem to be keen on using them for customizing user services. A higher percentage of respondents (67%) did not indulge in customizing start pages.

Applications such as podcasts, start pages, social bookmarking, instant messaging are frequently used for personal communication, however they remain unexploited as effective library tools even in the most modern environments. 50% respondents quoted one or two instances, specifically at the level of parent organization for sharing of photographs and video recordings of special events.

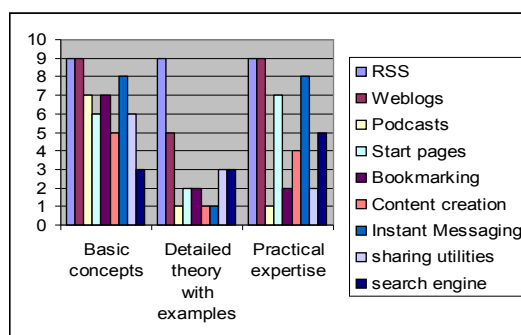


Chart 1. Extent of Use of Web 2.0 Technology by libraries

In spite of limited usage at present, the respondents apparently are aware of hidden potentials of Web 2.0. In response to the question on inclusion of this topic as subject of study in LIS curricula, many (67%) had suggested that it should be introduced at Bachelor's level whereas indepth theory with practical application can be added at Master's level in form of a module or topic in the paper on "IT Applications to Libraries". As is evident from chart 2, most librarians emphasize on teaching basic concepts and practical skills rather than giving theoretical knowledge about Web 2.0. As compared

to other applications RSS, Weblogs and Instant Messaging were almost unanimously selected as most important for the freshers to be able to handle adeptly for library use. All the responding libraries are small in size therefore most librarians felt that RSS feeds would serve better once they started with digitization and uploading full text of inhouse intellectual output of the organization from the library as in case of Institutional Repositories.

Considering that Web 2.0 is built upon the technical framework of open source software, one of the respondents expressed the need to train the students in the currently popular web programming tool AJAX.

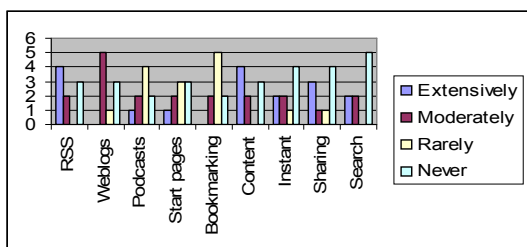


Chart 2. Type of competency in Web 2.0 applications expected by prospective employers in LIS student.

### 9. Discussion

During the analysis of the findings of this study it was found that practicing librarians are hesitant to use available Web 2.0 resources for library services. They had given reasons such as inability to prove “authenticity of the content” of the web 2.0 resources; IPR and Copyright issues; information overload and Organizational policies. Subsequently they are also reluctant to develop their own Web 2.0 services for specific reasons such as lack of “sustained contribution from staff”; work load and “compatibility between the library computer system and the user’s computer system”. At the same time they seem to be skeptical about

the general problems of the profession e.g. lack of communication skills of the graduates, issue of “professional lag”. Although practitioners often lament about LIS courses falling short of practical skill and the lag between curriculum and professional requirements, during this survey a certain understanding was expressed by some of them towards tension resulting from the rigid framework of the academia within and the pressure of technology from outside. In the job market an LIS graduate faces tough competition from variously skilled people coming from the fields of computer science, management and communication. Therefore training and education is more challenging than ever.

### 10. Conclusion

This preliminary study addresses some primary questions such as whether to include Web 2.0 applications in the syllabi of the course in question or not? If yes, then at what level? And what should be the depth of study with respect to theory and practical components? Towards the end of the study it was realized that a holistic approach towards personal and professional uses of Web 2.0 applications and tools is the need of the hour. Wherein, detailed accounts of the experiences of librarians with Web 2.0 applications and a feedback of the same from the users of the libraries could be studied in order to get answers to questions like; which tools and applications are most readily acceptable by the users? Is there a link between the extent of usage of the se applications and the age group of users? What are the methods employed by libraries to enhance the use of Web 2.0 applications by their own staff for personal and professional use? What are the best practices in optimizing the use of Web 2.0 technology in Indian libraries?

However due to inexorable evolution of technology these questions will likely lose their relevance in teaching, whether they lose to Web 3.0 or they become too embedded in daily life of students to be considered for a special training, rather we gear ourselves to enter into future realms of Web 3.0. For the present, although the teaching fraternity is charged with the responsibility of training the future librarians in Information technology such that they can distinguish between the technology to be known about, technology to be skilled in and technology to be implemented for enhancing library services. We can never overlook the basic fact that the libraries are service institutions and all activities we professionals undertake are meant to satisfy the users, hence whether Web 2.0 or anything beyond it, technology will always be a means to that end called user satisfaction.

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