

A Study of Web 2.0 Application in Libraries of Premier Institute of Gujarat

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***Abstract** - The present study is paying attention on the application of Web 2.0 technologies for providing information services in the Libraries of Premier Institute of Gujarat. The study explored what types of Web 2.0 tools were applied in such Libraries as well as their features and purposes. During the study, it was noticed that all Libraries deployed web 2.0 technology to provide information services. 66.7 percent of the Libraries applied RSS, vodcast, OPAC 2.0, Instant Messaging, Mashup, Social Bookmarking & Tagging where as 33.33 percent Libraries are using Blog, podcast, Social Networking Services, Google Docs and YouTube. In this survey none of the Libraries adopted wikis. According to the present and future needs of the users, the library personnel are to be proactive, skilled and passionate to provide the web based information services. At the same time the users are also required to be well versed with this kind of technology.*

Key Words: Web 2.0, Premier Institute of Gujarat, Web based Information Services, RSS, Blogs, Social media, OPAC 2.0, Podcast, Vodcast

Introduction:

The last two decades are witnessed the phenomenal growth of (ICT) Information and Communication Technology that has impacted tremendously on Libraries. Around the world academic Libraries have started encourage user participation through their dynamic or interactive websites. “Academic library web sites are Libraries’ virtual presentation to the world” says (Liu, 2008). Web 2.0 is the next characterization of the World Wide Web, where digital tools allow users to create, change, and publish dynamic content of all kinds. Users will all be publishers and creators of their own information. Because these applications allow people to make connections, carry on conversations, and collaborate, they are also known as the Read/Write Web. This development has made Libraries around the world keen to integrate Web 2.0 features such as RSS, Blogs, OPAC 2.0, Google Docs., Mashup, Wikis, user tagging sites, instant messaging (IM), and Social Networking Services like Facebook, Twitter, LinkedIn, Google+, Instagram, ResearchGate and Myspace, etc., into their library web sites. Indian university Libraries have also started embracing the technology so that they may easily outreach their users. Though it is a known fact that the technology is used and implemented in Indian university Libraries, there is a research that focuses on evaluation of Web 2.0 applications in Libraries. This is a pilot study of my research on “The Application of

Web 2.0 Tools in Indian State University Libraries and Analysis of their impact on Library and Information Services: A Case Study”.

Justifications for selection of the problem:

In India it is noticed that there are shifting dimensions of imparting education through different modes and a lot of significance is being given to ‘24X7 learning’ by NAAC and others. In this situation, it is very important that the university Libraries too embrace the idea of imparting 24X7 information facility and services to the users that can happen through implementing Web 2.0 tools in the Libraries.

Objectives:

The objectives of the study are:

- To identify Web 2.0 technologies those are applied in Libraries of premier institute of Gujarat.
- To examine purposes of Web 2.0 uses in the Libraries.
- To investigate characteristic features of the use of Web 2.0 in the Libraries.
- To know whether some innovative information services are being provided using Web 2.0 tools.

Definition of terms

Web 2.0 : Web 2.0 as a concept was first coined by the Tim O’Reilly in an article titled “What is Web 2.0” published in September 2005. (O’Reilly, 2005). According to O’Reilly, Web 2.0 is “the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them”. Web 2.0 allows users to interact and collaborate with each other in a social media, in contrast to the first generation of Web 1.0-era websites where people were limited to the passive viewing of content. (“Web 2.0,” 2016).

Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Web 2.0 basically refers to the transition from static HTML Web pages to a more dynamic Web that is more organized and is based on serving Web applications to users. Other improved functionality of Web 2.0 includes open communication with an emphasis on Web-based communities of users, and more open sharing of information. Over time Web 2.0 has been used more as a marketing term than a computer-science-based term. Blogs, wikis, and Web services are all seen as components of Web 2.0. (Beal, 2015)

Web 2.0 is “a space that allows anyone to create and share information online – a space for collaboration, conversation, and interaction; a space that is highly dynamic, flexible, and adaptable (Coombs, 2007)

Library 2.0:

Library 2.0 term was first coined by Michael Casey on his blog library crunch. Library 2.0 is the integration of Web 2.0 features in library web-based services. According to Maness, (Maness, 2006) Library 2.0 is “ the application of interactive, collaborative, and multi-media

web-based technologies to web-based library services and collections ” The application of concepts and technologies of Web 2.0 applied to the library services and collections is named as “Library 2.0”. (Arora, 2009).

The heart of Library 2.0 is user-centered change. It is a model for library service that encourages constant and purposeful change, inviting user participation in the creation of both the physical and the virtual services they want, supported by consistently evaluating services. It also attempts to reach new users and better serve current ones through improved customer-driven offerings. Each component by itself is a step toward better serving our users; however, it is through the combined implementation of all of these that we can reach Library 2.0. (Casey & Savastinuk, 2010).

The following are some examples of Web 2.0.

Blogs:

A blog (a truncation of the expression weblog) is a discussion or informational website published on the World Wide Web consisting of discrete, often informal diary-style text entries ("posts"). Posts are typically displayed in reverse chronological order, so that the most recent post appears first, at the top of the web page ("Blog," 2016). It is powerful two way web based tool. Users can post their ideas, suggestions, thoughts and comments through web blog. Libraries is to use for promotion and publicity of services.

Wikis: A wiki is a website or database developed collaboratively by a community of users, allowing any user to add and edit content. ("wiki - definition of wiki in English | Oxford Dictionaries," 2016.). Libraries can use wiki for social interaction and discussion among the librarian and patrons, subject guides and gateway.

RSS: RSS (most commonly expanded as “Really Simply Syndication”) is a family of web feed formats used to publish frequently updated works such as blog entries, news headlines, audio and video in a standardized format. (Wusteman, 2004)) noted the important role of RSS in keeping users updated with the latest information. RSS feeds update users about the additions or changes which take place on websites of interest, providing updates from one source instead of accessing individual websites.

Social Bookmarking:

Social bookmarking is a centralized online service which allows users to add, annotate, edit, and share bookmarks of web documents (“Social bookmarking,” 2016). Tagging is a major feature of social bookmarking systems, its allow users to categorize their bookmarks in easy ways and develop shared vocabularies known as folksonomies. Digg, Delicious, Reddit, Google Bookmarks, are the example of social bookmarking tools.

Social Networking: “Social network sites as web-based services “that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site” (Boyd & Ellison, 2007). Most famous social networks such as, Twitter, Facebook, LinkedIn, MySpace, Ning etc.

Podcasting: A pod cast is a chain of audio files which is circulated over the internet by syndicated download, through RSS feeds, to portable audio devices and personal computers. (King & Brown, 2009) noted that Libraries can share pictures, events, and instructions by podcast.

Vodcasting: Podcasting is used for delivering audio files, vodcasting is used for delivering video content. It is called as video podcasting or vlogging. A vodcast mainly is used to deliver videos on demand to patrons over the web.

Instant Messaging: Instant messaging (IM) is a type of online chat, It's allows online communication between two or more people using text based short messages over the Internet. Libraries use IM to provide virtual reference services, Advice on library services and online meetings, Guidance with resources. Librarian can send text, video, and audio files, such as library instruction at real time.

OPAC 2.0: OPAC 2.0 is the application of Web 2.0 to online catalogues and is also referred to as next generation or twenty-first centuries catalogues "OPAC 2.0, library users may add comment or rating to records of books they have borrowed from the library. All this information may help another reader to know if the book they just identified will satisfy them" (Chalon & Pretoro, 2008) noted OPAC 2.0 allow user to Commenting, Rating, Tagging, Book suggestion.

Mashup: A mashup is a web application that uses content from more than one source to create a single new service displayed in a single graphical interface ("Mashup (web application hybrid)," 2015). Many people are experimenting with mashups using Amazon, ebay, Flickr, Google Map, Youtube and APIs, which has led to the creation of the mashup editor.

Literature Review:

(Barsky & Cho, 2007) discussed a number of social search tools, including Google Custom Search, del.icio.us, YouTube, and Flickr, tools that the authors find useful for the practice of health information professional. (Cuonglinh, 2008) conducted a survey to provide an overall picture of application of Web 2.0 technologies in Australian University Libraries (AULs). It was found that two thirds of AULs have deployed the Web 2.0 technologies and only four technologies namely RSS, blogs, instant messaging and podcasts are used for some specific purposes with basic features. (Kannikaparameshwari & Nikam, 2009) Examine the application of web 2.0 technologies in selected Indian Libraries (IIT's, IIM's, National Law schools). It was found that 25% of selected Indian Libraries deployed one or more web 2.0 technologies. Out of 28 selected Indian Libraries, 3 Libraries are using web 2.0 technologies.

(Ram, K, & Kataria, 2011) conducted a survey at Learning Resource Centre, Jaypee University of Information Technology. Author suggested that number of provisions to adopt some web 2.0 applications in its library services to create information literacy, but that users of the Jaypee University of Information Technology library still lack awareness about various Web 2.0 applications necessary for teaching and learning. (Vijayakumar, 2012) Examine the use of web 2.0 applications in medical education and e-learning. Author said that academic institutions, Libraries, e-learning vendors, hospitals, publishers, media, literarily all walks of life are implementing Web2.0 technologies to serve the need of "digital natives" and "digital immigrants".

Scope and Limitation:

This study aims to provide an overall picture of the Web 2.0 technologies adoption by Libraries of premier institutes of Gujarat like Nirma University, DA-IICT, Pandit Deendayal Petroleum University. A study focus to identifying what types of Web 2.0 technologies have been applied in selected Libraries.

This Study included only above mention three premier institutes. As a result the researchers were unable to study users' approach and inclination towards Web 2.0 tools in Libraries.

Research Methodology:

The study is based on content analysis that is used for qualitative approach. The three university websites were visited and library homepages were visited and searched. All links in the page were observed and noted for the implementation of Web 2.0 tools. A checklist as the main research instrument was developed based on other checklists and questionnaires, and synthesized ideas from literature. Data were collected by circulating structured online checklist/ questionnaire within one month. Microsoft Excel was utilized for analyze data, and present results.

Data Collection:

The survey was conducted from July 15th May 2015 to 15th June 2015. As there is no existing standard evaluation criteria to study about Web 2.0 a tool, a checklist is made in excel sheet based on the utilization of web 2.0 tools that is based on the literature reviewed and was adapted from different checklists. The researcher visited the website of all institutes Libraries selected for the study and observed the presence and utilization of web 2.0 applications then structured online checklist/ questionnaire sent to the three premier institutes of Gujarat (Nirma University, DA-IICT, Pandit Deendayal Petroleum University). In this study, the researcher finalized 118 checkpoint to understand the usage of web 2.0 tools in Libraries (See Table 1). Each checkpoint allotted a value 1 or 0 according to yes or no answer. The values entered in Excel spreadsheets. The "application index" of each library calculated by the following formula. Application index = Total of "Yes" answers/Total of checkpoints × 100.

Table-1 Number of Checkpoints

Web 2.0 tools	Number of Checkpoints
Web 2.0 Use	4
RSS	12
Blog	23
Podcast	13
Vodcast	6
OPAC 2.0	11
Instant Messaging	8
Wikis	16
Social Networking Services	12
Google Docs.	4
Mashup	7
Social Book marking, Tagging & Youtube	2
Total	118

Results and Discussion

Based on the data collection (See Table-2), the “Application index” of each selected library was calculated as follow.

Table-2
Application index of web 2.0 tools

Name of the Institute	Total of "Yes" answers	Application index
Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)	42	35.59
Nirma University	48	40.68
PanditDeendayal Petroleum University (PDPU)	18	15.25

The total application indexes of web 2.0 technologies are 91.53 (DA-IICT Library 35.59, Nirma University Library 40.68 and PDPU Library 15.25). The mean of Web 2.0 application indexes is calculated by the following formula:

$$\text{Mean application Index} = \text{Total of indexes/Number of selected Libraries}$$

$$\Rightarrow \text{Mean} = 91.53/3 = 30.51$$

Thus, the mean of Web 2.0 application indexes in selected Libraries is approximately 31 points. As can be Seen from the Table 3, the library of Nirma University gained the highest application index with 35.59 points while the library of Pandit Deendayal Petroleum University (PDPU) had lowest one with only 15.25 points.

Figure No.1shows the percentage of using different web 2.0 tools.

As shown in the table-2, eleven types of Web 2.0 tools are employed by premier institutes of Libraries in Gujarat (RSS, Blog, Podcast, Vodcast, OPAC 2.0, Instant Messaging, Social Networking Services, Google Docs, Mashup, Youtube and Social Bookmarking & Tagging). It is evident from the Figure that 66.7 percent of the Libraries applied RSS, vodcast, OPAC 2.0, Instant Messaging, Mashup, Social Bookmarking & Tagging (2 out of 3 universities), 33.33 percent Libraries are using Blog, podcast, Social Networking Services, Google Docs and YouTube (1out of 3 universities).In this survey none of the Libraries adopted wikis.

Table -3
RSS were used for

No.	Purposes	No. of Library using RSS	Percentage
1	General news/University news	1	33.33
2	Library news and events	1	33.33
3	List of new books	2	66.66
4	List of e- journals and e-resources databases	2	66.66
5	Announcements about workshops and exhibitions	1	33.33
6	Usage of RSS for listing of resources in additions to Institutional Repositor	1	33.33

Table 3 reflects that Libraries have been applied RSS for providing Library news and events, information about e-journals and books, databases, Announcements about workshops.

DAICT library also makes classified RSS entries which help in access easy. Nirma university library provided Content Alert service using RSS feeds. This service helps the users by automatic delivering of latest published web contents of e-journals subscribed by the Library through their email.

Blog was adopted by Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) for Providing General information, Research tips, List of new books, Book reviews/discussions, Information literacy, List of e-resources and databases, Research tools, Suggestions. Characteristics are found in the blog – Instructions given to use blogs, Blog links to Library’s homepage, Dates and time of postings of blog entries, Entries are searchable by topics and date, Library uses RSS to feed blogs’ entries , Archival entries are more than 1 year.

Podcast was adopted by Pandit Deendayal Petroleum University (PDPU) for providing Library orientation tours and General searching skills.66.66 percent of the Libraries have been applied Vodcast for providing guidance to users for e-resources: databases, OPAC, e-books access and Library orientation tours.

Table-4 OPAC 2.0

No.	Characteristics	Nos	Percentage
1	Export Book Record databases from OPAC	2	66.66
2	Provide option for more searches from other website	2	66.66
3	Allow patrons to contribute to the book record	1	33.33
4	Allow Patrons to save records and searches	1	33.33
5	RSS feeds available for Search Result	1	33.33
6	Patrons able to make comment	1	33.33
7	Patrons able to make Rating	1	33.33
8	Patrons able to make Tagging	1	33.33
9	Patrons able to make Book suggestion	1	33.33

Table 5 is shown that 66.66 (2 out of 3 Institute) percent of the Libraries have been used OPAC 2.0. 66.66 percent Libraries’ OPAC provide functionality of export book record databases from OPAC and option for more searches from other website. Nirma University library OPAC provides functionality to patrons to contribute in to the book record, save records and searches, make comment, rating & tagging and RSS feeds available for Search Result.

Table-5 Instant Messaging

No.	Characteristics	No’s	Percentage
1	Reference services	2	66.66
2	Advice on library services	2	66.66
3	Guidance with resources	2	66.66

Table 5 reflects that66.66 percent of the Libraries have been adopted instant messaging for providing Reference services, Advice on library services, Guidance with resources. DA-IICTlibrary deals Ask Librarian service with functionality of text-based chat, voice chat for more than eight hours a day.

Only 33.33 percent of the Libraries have been using social networking services. Nirma University Library using Facebook for sharing library news/events, pictures/video clips, marketing Library services, providing online reference service, providing information about new acquisitions, sharing information about library resources.

Google Docs. is used to create and share spreadsheets, presentation, documents and survey purposes. 66.66 percent of the Libraries have been adopted Mashup for search interface of worldcat , title image in OPAC from Google books, Amazon and other Online Shopping site, search interface of Google Books. 33.33 percent of the Libraries are using YouTube and 66.66 percent of the Libraries are using Social Bookmarking & Tagging.

Recommendations:

- According to the results, It is suggested and necessary that all Institute Libraries should apply dynamic Library websites with maximum implicating Web 2.0 to provide information services that will help the users to get relevant information instantaneously.
- Blog, Vodcast, Podcast, IM, Youtube can be used for exploring Library Services and to orient end users.
- Facebook, Twitter, Instagram, Myspace can be used for marketing Library Services and attract the Users in the Library.
- Library schools should re-design their curriculum to incorporate a course on Web 2.0 which help them to prepare future Library Professionals for the new challenges in the field.
- It is important to conduct user evaluation studies regarding Web 2.0 applications to understand the user satisfaction levels.
- The library staff should be informed and taught to provide information literacy related to the Web 2.0 application and its importance in the Libraries.

Conclusion:

In general, it was noticed that all Libraries are using web 2.0 extensively. However the general web 2.0 application index is found very low as the mean application index is 30.51 points and the highest index is 40.68 points. Among the Web 2.0 technologies utilized by three Premier institute libraries, RSS, Vodcast, OPAC 2.0, Instant Messaging, Mashup, Social Bookmarking & Tagging are the most widely applied technology and Blog, podcast, Social Networking Services, Google Docs and YouTube are the least used technology. This survey has a lot of impact as it addresses the application of Web 2.0 tools in libraries. It attempts to provide academic libraries with helpful information to better meet their user needs by effectively applying Web 2.0. technologies. Library & Information professionals may also find this research beneficial as they plan to make Web 2.0 applications in their Libraries.

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