Applications of Web 2.0 tools in IIT Libraries in India: a Study

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Abstract

Web 2.0 is a second generation website that deals with the ability, of people being able to exchange information online. Web 2.0 based technologies have provided more opportunities and opened up new ways of communicating and collaborating. The transition to Web 2.0 is based on 'interactive' use of web. Users can carry on interaction with others. People can collaborate on the same document at fairly much at the same time. Users can post thoughts and creative expressions, and there are places for other to leave comments. Web 2.0 has created a platform for increasing interpersonal content facilitation, sharing, creativity, service delivery, innovation, and collaboration. Organizations have been taking advantage of Web 2.0 technologies in many ways- by providing a better communication channel for all stakeholders for sharing their experiences & collaborative working and introducing innovative way of marketing products and services etc. Web 2.0 technologies have played a significant role in our ability to keep up with the changing needs of library users.

This article focuses on the impact of web 2.0 on libraries and information services of IIT Libraries in India. Also discussed the Web 2.0 tools used by IIT libraries for providing library 2.0 services to their users.

Keywords: Web 2.0, IIT, Libraries, Tools, India, Blog, Twitter, Youtube, RSS Feed social Networking, Mash-up, Cloud computing, Instant messaging, chatting, Flickrs

1. Introduction

The quality of education system in any society is a measure of its development and competitiveness. In the present age of knowledge explosion, where new technologies are being developed at a rapid pace, their assimilation with the existing knowledge, development of infrastructure, imparting of education and training to cater to the growing requirement for the qualified and trained manpower for the operationalization of technologies are the responsibility of the Information Technology institutes, Management institutes, and Science institutes education system.

The top institutions of India like Indian Institute of Technology (IIT) libraries plays a significant role in the Engineering education system. For a student seeking a graduate degree, it is largely an information sources center that supplements class room and outside learning. The

IIT libraries serves as a sources of information for new technological developments and their application. Thus such libraries are expected to identify, acquire, organize, store, retrieve and disseminate information not only on the specific subject covered by the curriculum, but also on the current directions of technological advancement.

2. Research Problems

The development of emerging technologies has resulted in a rapid increase of information and communication technology (ICT) tools. Web 2.0 technologies have played a significant role in our ability to keep up with the changing needs of library users. Web 2.0 based technologies have provided more opportunities and opened up new ways of communicating and collaborating. So, It is very essential to know the current status of Web 2.0 services provided by IIT Libraries in India. The library professionals need to have knowledge of such web 2.0 tools so that they can provide prompt reference and other services to the users.

The study of "Applications of Web 2.0 in IIT Libraries in India" can encourage the librarians to apply the Web 2.0 tools effectively in their libraries. As well as this study encourage the users to utilize such services which is very useful for their higher study. The present study will prove to be a guide to know various aspects of Web 2.0 tools for the users as well as researchers and LIS professionals.

3. Review of Literature

Review of literature is an early step for conducting research. It enables to avoid the duplication of research work and broadens the understanding of the research problem. This is an overview of the literature which provides a background to the area of research under consideration to various research studies related to the present research problem "Applications of Web 2.0 in IIT's, Libraries in India: A Study". The relevant data was collected from various sources like books, journals, magazine, proceeding, thesis and the web articles in open access and peer reviewed journals. The emergence of the new Web 2.0 applications and the research conducted on them are discussed, and a brief introduction to the application used in this study is included.

Bhatt, Chandra, and Denick[5] showed that how can Web 2.0 tools function as information awareness tools for faculty and students in an academic community? Why is 'information awareness' so crucial? He wished that more faculty and students realize the potential of Web 2.0 applications in keeping up- to – date with new information and information resources. He mentioned that how various Web 2.0 applications like Blogs and RSS feed, Social bookmarking, friend feed, Facebook are being used at Drexel University. He concluded that the Web 2.0 technology are having an important impact on library services. Morange, Joel (2010)[34] discussed about Web 2.0 and controversial point about the same as well as with virtual communities. Dasgupta (2012)[6] discussed the various groups of social network and their behavior. And also discussed the benefit of the social networking. Lihitkar, (2010)[27] discussed the importance of the web 2.0 tools in the present libraries. She concluded that Weblog is becoming increasingly popular in higher education. The role of an instructor is very important in making it an effective tool. There are many ways in which Blogs and RSS feeds can be used in academic environment to promote and market services and resources to faculty and the students. Librarians are using Blogs in unique and diverse ways for e.g. in personal management, class announcements, posting student work for viewing etc. Lihitkar (2011), described in the research paper that the concept of virtual reference services and Instant messaging, with the salient features of instant messaging

services and their usefulness as a reference services in the libraries. As well as overviewed various IM softwares available for the use.

4. Objectives of the study

The basic aim of the study was to find out the applications of Web 2.0 in Indian Institute of Technology (IIT) Libraries in India. The present study were carried out with the following objectives:

- ➢ To know the concept of Web 2.0 and its applications in providing library services to users.
- ➢ To make a survey in order to know the applications of Web 2.0 among the IIT Libraries in India.
- ➢ To examine the characteristic features of Web 2.0 tools used in IIT Libraries in India.
- ➢ To offer suggestions regarding effective use of Web 2.0 Technology in Libraries.

5. Scope and Limitations

The scope of the study was limited to IIT's Libraries in India. The Indian Institutes of Technology (IITs) are a group of autonomous engineering institutes of higher education, which has declared as "Institutions of National Importance" by the Govt. of India. The IITs are governed by HRD, Govt. of India under the Institutes of Technology Act, 1961.

Indian Institute of Technology are centrally funded institutes which are looked after by the Government of India. At Present, there are only 16 IIT's college libraries all over India in which seven IIT colleges are old and 08 IIT colleges are started in the year 2008–09 and 01 IIT (BHU) Varanasi granted recognition as IIT as a national important and started in the year 2011.

Table No. 1: **List of IIT's in India (www.wikipedia.com)**

Sr. No.	Name	Short Name	Est. year	Recognition as IIT	City/Town	State/UT	Questionniars Distributed	Response Received
1	IIT Kharagpur	IITKGP	1950	1951	Kharagpur	West Bengal	√	√
2	IIT Bombay	IITB	1958	1958	Mumbai	Maharashtra	√	√
3	IIT Madras	IITM	1959	1959	Chennai	Tamil Nadu	√	√
4	IIT Kanpur	IITK	1959	1959	Kanpur	Uttar Pradesh	√	√
5	IIT Delhi	IITD	1961	1963	New Delhi	Delhi	√	√
6	IIT Guwahati	IITG	1994	1994	Guwahati	Assam	√	√
7	IIT Roorkee	IITR	1847	2001	Roorkee	Uttarakhand	√	√
8	IIT Ropar	IITRPR	2008	2008	Rupnagar	Panjab	√	√

9	IIT Rajasthan	IITJ	2008	2008	Jodhpur	Rajasthan	√	√
10	IIT Bhubaneswar	IITBBS	2008	2008	Bhubaneswar	Orissa	√	√
11	IIT Hyderaba	IITH	2008	2008	Hyderabad	Andhra Pradesh	√	√
12	IIT Gandhinagar	IITGn	2008	2008	Gandhinagar	Gujarat	√	√
13	IIT Patna	IITP	2008	2008	Patna	Bihar	√	√
14	IIT Indore	IITI	2009	2009	Indore	Madhya Pradesh	√	√
15	IIT Mandi	IIT Mandi	2009	2009	Mandi	Himachal Pradesh	√	√
16	IIT –BHU	IIT-BHU	2012	2012	Varanasi	IIT -BHU	√	x
							16	**15**

6. Research Methodology

The descriptive method of research includes questionnaire and interview tool has been followed for current research study. The questionnaire was designed with questions on staff, infrastructure, resources available and Web 2.0 services provided by the IIT Libraries in India. These questionnaires were sent to all IIT Libraries in India. Required data collected from 16 IIT's Libraries in India. Out of 16 Libraries 15 respondents were received. The response rate is 93.75% , in which some data are personally collected, some response received by the post and some respondents sent questionnaires through Email and data also collected from the respective website.

7. Web 2.0 technology

Web 2.0 is not a technological change or a change in programming language. Web 2.0 refers to a revolution in how the internet is used. Web 2.0 applications concentrate on sharing content with the masses to let others comment on it or to create new content of their own. In this technology anyone and everyone can publish their work on the internet with ease. Web 2.0 is a socially updated version of Web 1.0. While Web 1.0 was limited to just reading. A Web 2.0 site gives its users the free choice to interact or collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community.

Web 2.0 technology started in the year 2002 to 2009 in which the various companies included like Facebook, LinkedIn, Group on etc. Web 2.0, in particular, has brought prominent changes that affect internet users and application developers. The main agenda of Web 2.0 is to connect people in numerous new ways and utilize their collective strengths.

The term "Web 2.0" was coined in 1999 by Darci Di Nucci who was a consultant on electronic information design. This term did not come out until 2003. In 2004, the term began to rise in popularity O'Reilly Media and Media Live hosted the first Web 2.0 video conference. The term Web 2.0 closely associated with Tim O'Reilly because of the O'Reilly media Web 2.0 conference in 2004. Tim O'Reilly, one of the first to use the term Web 2.0, describes it as

viewing the web as a platform to distribute content. Web 2.0 allows user to do much more than just retrieve information. They provide the user with more user-interface, software and storage facilities, all through their browser. User can provide the data that is on a Web 2.0 website and exercise some control over the data.

"Web 2.0" refers to web development and web design that facilitates interactive information sharing, interoperability, user-centered design and collaboration on the www. Examples of web 2.0 include web-based communities, hosted services, web applications, social networking sites, video-sharing sites, wikis, blogs, mash-ups and YouTube, Social bookmarking, tagging, folksonomies etc. Web 2.0 technologies a second generation of services available on the web that allows its users to interact with other users or to change website content. Web 2.0 is not a technological change or a change in programming language. Web 2.0 refers to a revolution in how the internet is used. Web 2.0 applications concentrate on sharing content with the masses to let others comment on it or to create new content of their own.

John Robb wrote: "Web 2.0 is a system that breaks with the old model of centralized Web sites and moves the power of the Web/Internet to the desktop."
Web 2.0 is defined as "the second generation of the www in which content is user generated and dynamic,"
According to Tim O'Reilly "Web 2.0 is the business revolution in the computer industry caused by the move to the Internet as a platform, and an attempt to understand the rules for success on that new platform" [12] Tim Berners-Lee (2006) defined that "Web 2.0 is a piece of jargon"

Linda Young (2008) defined Web 2.0 as "the second generation of the Web, which enables people with no specialized technical knowledge to create their own websites, to self-publish, create and upload audio and video files, share photos and information and complete a variety of other tasks."

8. Difference between Web 1.0 and Web 2.0 Technology

Table No.2: **Difference between Web 1.0 and Web 2.0**

Sr. No.	Web 1.0	Web 2.0
1	**Tim Berners-Lee**	**Darcy DiNucci** (a Consultant on electronics information design)
2	Read Only	Read and Write
3	Static web pages	Dynamic web pages
4	Content published by the webmaster	Open content to be used and reuse, wiki
5	No user participation,	Active user participation
6	Not often updated	(usually) Frequently updated
7	Communication via Email	Communication via Facebook, Instant messaging, Blog, Twitter, chatting
8	Software on PC	Software on PC, Tablet, mobile, laptab

9	Wire	Wireless
10	Directories (Taxonomy)	Tagging (folksonomy)
11	Content Management System	Wiki
12	Britannica online	Wikipedia
13	Personal website	blogging

9. Characteristic of the Web 2.0 technology

Web 2.0 websites allow users to do more than just retrieve information. The Web 2.0 offers all users the same freedom to contribute. According to **Best**, the characteristics of Web 2.0 are:

- Active Users participation
- Open content to be used and reused
- Decentralization
- Modularity
- User Control
- Rich user Interactions.
- Dynamic web pages
- Openness
- Freedom
- Collective Intelligence

10. Advantages of Web 2.0 technology [12]

There are following advantages of the Web 2.0 technology.

- To support innovation
- Creativity
- Collaboration
- Information Sharing
- Substantial Cost and time saving on projects.
- Confidentiality and privacy of data
- Flexibility to participate from anywhere
- Ability to conduct multilingual studies and automatic generation of report, table, chart and transcript.

11. Types of Web 2.0 tools:

Web 2.0 tools are internet based services which includes social networking sites, Blogs, Twitter, Wikis, Instant Messaging, Social Networking, Social Bookmarking, Skype, Facebook, Mash-ups, Cloud computing, Tagging, Folksonomy, MySpace etc. These services aim to accelerate creativity, support information sharing, online collaboration and networking among the users. The use of Web 2.0 tools has grown considerably in the education sector in the last few years.

All these tools are Social, Participatory, Collaborative, Easy to use, Create community environment- because they are online communities. There are so many tools as mention in the following Figure.
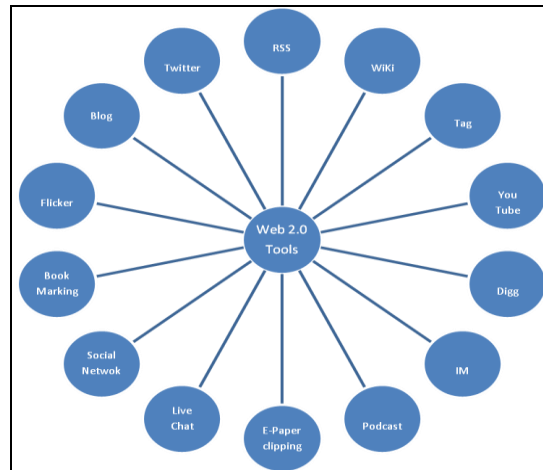
Fig.1: Web 2.0 Tools

12. Applications of Web 2.0 tools in IIT Libraries in India

There are total 16 IIT's Libraries in India and response received was 15 libraries. But out of 15 libraries, we found that only 12 libraries is using Web 2.0 technology and providing library 2.0 services to users. Following table shows the details.

Table No. 3: Use of Web 2.0 tools In the IIT's Libraries in India

Sr. No	Name of the IIT'S, Libraries in India	Social Networking	Blog	Twitter	YouTube Video	RSS Feed	Instant Messaging	Social Bookmarking	Tagging	Delicious	Flickr	Podcasting	Folksonomy	Mash-up	Cloud Computing	Wiki	Virtual tour	Total Web 2.0
1	IIT, Delhi	√	x	√	x	√	√	x	√	x	x	x	x	x	x	√	x	6
2	IIT, Kharagpur	√	√	x	√	√	√	x	x	x	x	x	x	x	x	x	√	7
3	IIT, Madras	√	√	√	x	√	√	x	x	x	√	x	x	x	x	√	x	7
4	IIT, Roorkee	√	√	√	√	x	x	x	√	x	√	x	x	x	x	x	x	6
5	IIT, Kanpur	√	x	x	√	√	x	x	√	x	√	x	x	x	x	x	x	5
6	IIT, Bombay	√	√	√	√	√	√	√	√	√	√	√	x	x	x	√	x	12
7	IIT, Indore	√	√	√	x	√	x	x	x	x	x	x	x	x	x	√	x	5
8	IIT, Jodhpur	√	√	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
9	IIT, Ropar	√	x	x	x	√	x	x	x	x	x	x	x	x	x	x	x	2
10	IIT, Mandi	√	x	x	√	x	√	x	√	x	x	x	x	x	x	x	x	5

11	IIT, Hyderabad	√	√	√	x	√	√	√	√	x	x	x	x	x	√	√	x	**10**
12	IIT, Gandhinagar	√	x	√	x	√	√	x	x	x	x	√	x	x	x	x	x	**6**
	Total	**1 2**	**7**	**7**	**5**	**9**	**7**	**2**	**6**	**1**	**4**	**2**	**0**	**0**	**1**	**5**	**1**	

Table No. 4: Analysis of use of Web 2.0 tools In the IIT's Libraries in India

Sr. No	Web 2.0 tools	Web 2.0 tools used in IIT's Libraries in India Out of 12	Persentage %	Ranking
1	Social Networking	12	100 %	1
2	RSS Feed	09	75%	2
3	Blog	07	58.33 %	3
4	Twitter	07	58.33%	3
5	Instant Messaging	07	58.33%	3
6	Tagging	06	50%	4
7	YouTube, Video sharing	05	41.66%	5
8	Wiki	05	41.66%	5
9	Flickr	04	33.33%	6
10	Social Bookmarking	02	16.66%	7
11	Podcasting	02	16.66%	7
12	Cloud Computing	01	8.33%	8
13	Delicious	01	8.33%	8
14	Virtual tour	01	8.33%	8
15	Folksonomy	00	Nil	
16	Mash-up	00	Nil	

Table 4: shows that Social Networking site have been used by maximum 12 (100%) IIT's, libraries in India. Social Networking tool is the most popular tool to communicate with users and other staff members. Social Networking tools includes the Facebook, LinkedIn, MySpace,

Gmail, Word Press, Blogs, Twitter, IM etc. The use of these tools is increasing among the students nowadays. Social networking got first rank.

RSS (Really Simple Syndication) tool was used by maximum 09 (75%) IIT's, libraries in India. The popularity of RSS may be attributed to its simplicity and easy to use feature. The users can subscribe to the RSS feeds which cater to their academic and research needs. For example, the library of IIT Bombay provides a variety of RSS news feeds to keep users up to date with what is going on around the IIT Bombay. The news feeds are available from department of library news. RSS feed got second rank in using IIT Libraries.

The Blogs, Twitter and Instant Messaging were used by maximum 07 (58.33%) IIT's, libraries in India. The use of these tool is being getting immense popularity. These are very easy to maintain and do not require much of time or effort. Another strong feature is availability of free hosting software. These tools got 3rd rank in using IIT Libraries.

The Tagging was adopted by 06 (50%) IIT's, libraries in India. Tagging tools got 4rd rank in using IIT Libraries. This tool is very important for the researcher. While searching the article of our interest, we can tag the article for further use. Tag is like a bookmarking tool. Everyone can download the article and tag if favorite.

The YouTube and wiki tools was applied by minimum 05 (41.66%) IIT's, libraries in India. These tools got 5rd rank in using IIT Libraries.The Flickr was adopted by 04 (33.33%) IIT's, libraries in India. Flickr got 6rd rank in using IIT Libraries

Podcast is a digital media file or a related collection of such files which is distributed over internet using syndication feeds for playback on a portable media player and personal computers. The Podcast / Vodcast was the least used tool it was found that just only 02 (16.66%) IIT's, libraries in India used it. These tools offer users a chance to listen or view to the files whenever or wherever they want to. **Social Bookmarking** is also very famous web 2.0 tool. We can bookmark any article or any document and share among the interested friends.

The Podcast and social bookmarking were adopted just only 02 (16.66%) IIT's, libraries in India that means IIT Bombay and IIT Gandhinagar.

The Delicious, Cloud computing, mash-up were the least used tools- it was observed that each tools used by only 01 IIT library in India. None of the Libraries are using folksonomy and mash-up tools.

It is observed that Social Networking were more used 12(100%) whereas cloud computing was less used as well as Mash-up and folksonomy were not used in the IIT's, libraries in India .

Table No. 5: Analysis of Way of knowledge gained by LIS professionals about use of Web 2.0 tools in IIT's, Libraries in India.

S N	Way of knowledge for LIS professionals about web 2.0	IIT Libraries in India
		IIT
1	Training provided by the organization	0
	Fund provided by the	0

2	organization for training	
3	Self-Motivated	11
4	Friends encourage	01

As indicated in Table 5, it is noted that Maximum 11(91%) IIT's, librarians in India were received the knowledge about web 2.0 by self-motivation. The librarians themself done practice of web 2.0 tools and try to implement these tools for providing the Library 2.0 services.

13. Purpose of Web 2.0 Tools used in IIT Libraries in India

Table No. 6: Purpose of Web 2.0 Tools used in IIT Libraries in India

Sr. No.	Web 2.0 tools & Purpose used in IIT Libraries	IIT Delhi	IIT	IIT Madras	IIT Roorkee	IIT Kanpur	IIT Bombay	IIT Indore	IIT	IIT Ropar	IIT Mandi	IIT	IIT Gandhi	
1	**Social Networking** 1.Keep in touch with family & Friend	-	-	-	-	-	-	-	√	√	√	-	-	03
		-	-	-	-	-	-							0
	2. To share information using a variety of features	-	√	-	-	√	-	-	-	-	-	-	-	02
		√	-	-	√	√	-	-	-	√	-	√	-	05
	like pictures, Video clip	√	√	√	√	√	√	-	-	√	√	√	√	10
	3. To Create profile in details	-	-	-	-	-	-	-	-	-	-	-	√	01
	4. To suggest information needs on the Librarian wall on Facebook 5. To Keep in touch CAS 6. To promote Library Services													
2	**Blog** 1. For library related News & Events	-	√	√	√	-	-	√	-	√	-	-	-	05
	2. For new releases books, Databases, video etc	-	-	-	-	-	-	-	-	-	-	-	-	0
		-	-	-	-	-	-	-	-	-	-	-	-	0
		-	-	-	-	-	-	-	-	-	-	-	-	0
	3.Marketing of Lib. &	-	-	-	-	-	√	-	√	-	-	√	-	03
		-	-	-	-	-	-	-	-	-	-	-	-	0

No		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	Total
	Inf. services 4. As a discussion Forum 5. Collection Development 6.Appeal to special interested group													
3	**Twitter**													
	1. For library related News & Events	-	-	√	√	-	√	-	-	-	-	-	√	**04**
		-	-	-	-	-	-	-	-	-	-	-	-	**0**
	2. For discussion	√	-	-	√	-	√	-	-	-	-	√	-	**04**
	3. To stay connected with other librarians, Friends & Students	-	-	-	-	-	-	√	-	-	-	-	-	**01**
	4. To interact with vendor	√	-	-	-	-	-	-	-	-	-	√	-	**02**
	5. For reference services													
4	**Tagging**													
	1.To enter the specific location	√	-	-	√	√	√	-	-	-	√	√	-	**06**
	2. To Edit data	-	-	-	√	-	√	-	-	-	√	√	-	**04**
	3. To collect data	-	-	-	√	-	√	-	-	-	√	√	-	**04**
5	**Social Bookmarking**													
	1. To use keyword shortcut for some of favorite links	-	-	-	-	-	-	-	-	-	-	-	-	**.0**
		-	-	-	-	√	-	-	-	-	-	√	-	**02**
	2. To add personal Collections	-	-	-	-	√	-	-	-	-	-	-	-	**01**
	3. To save the time and efforts in searching	-	-	-	-	√	-	-	-	-	-	√	-	**02**
	4. To maintain own webpage link	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	5. To search specific topic													
6	**Youtube**													
	1. For Entertainment	-	-	-	-	-	-	-	-	-	-	-	-	**0**
	2. To show the library services	-	√	-	√	√	√	-	-	-	√	-	-	**05**
	3. To Find Library resource services	-	√	-	√	-	√	-	-	-	-	-	-	**02**
		-	-	-	-	-	-	-	-	-	-	-	-	**0**

#		1	2	3	4	5	6	7	8	9	10	11	12	Total
	4. To discover new ways to implement technology in the library	-	-	-	-	-	-	-	-	-	-	-	-	0
	5. To teach library etiquettes													
7	**RSS**													
	1. For library related News & Events	√	√	-	-	√	√	√	-	√	-	√	√	08
		-	-	-	-	-	-	-	-	-	-	-	-	0
	2.To keep students update on key information /	-	√	√	-	-	√	-	-	-	-	√	-	04
	Research article	√	-	-	-	√	-	√	√	-	-	√	√	06
	3. For e-journals / Online Databases	√	-	√	√	√	√	-	-	√	-	√	√	08
	4. To save the time of researcher/ Students and faculty													
	5. Organizational use													
8	**Wiki**													
	1. For to Searching Information	√	-	√	-	-	√	-	-	-	-	√	-	04
		√	-	√	-	-	√	-	-	-	-	√	-	04
	2. For to allow users to create, edit and link web pages easily.	-	-	-	-	-	-	-	-	-	-	-	-	0
	3. Use as Research tool	-	-	-	-	-	-	-	-	-	-	-	-	0
	4. To enable user to upload the files	√		√	-	-	√	√	-	-	-	√	-	05
	5. Knowledge Sharing													
9	**Instant Messaging**													
	1. Instant clarification for the Questions	√	√	√	-	-	-	-	√	-	-	√	√	06
	2. For Library offering text based chat	√	√	√	-	-	√	-	√	-	√	√	√	08
	3. For online meeting	√	√	-	-	√	-	-	-	-	-	√	√	05
	4. For providing Virtual Reference Service	√	-	√	-	-	-	-	√	-	√	√	-	05
	5. Guidance about resources	√	√	√	-	-	-	-	-	-	-	-	-	03
10	**Podcasting**													
	1. For current News about what is going on in the library	-	-	-	-	-	√	-	-	-	-	-	√	02
		-	-	-	-	-	-	-	-	-	-	-	-	0
		-	-	-	-	-	-	-	-	-	-	-	-	0

2. For highlighting about new resources	-	-	-	-	-	-	-	-	-	-	-	-	**0**
3. To share information to anyone 4. Speeches of important personality 5. Library orientation tour	-	-	-	-	-	-	-	-	-	-	-	-	**0**

Table 7: Views of IIT Librarians and Attitudes of the library professionals for using Web 2.0 tools in Libraries in India

Sr. No	Name of the IIT's , Libraries in India	Views of Librarians for using Web 2.0 tools				Attitudes of IIT Library Professional	
		For Quick Services to the Users	For Digital Library	For Update the Knowledge of the Users	For better Communication with the Users	LIP co-operating for providing services to the Users	LIP Not co-operating for providing services to the Users
1	IIT Library, Delhi	√	√	√	√	√	x
2	IIT Library, Kharagpur	√	x	x	√	√	x
3	IIT Library, Madras	x	√	x	√	√	x
4	IIT Library, Roorkee	√	x	√	√	√	x
5	IIT Library, Kanpur	x	x	√	x	√	x
6	IIT Library, Bombay	√	√	x	x	√	x
7	IIT Library, Indore	√	√	x	√	√	x
8	IIT Library, Jodhpur	x	√	x	√	√	x
9	IIT Library, Ropar	x	x	x	√	√	x

10	IIT Library, Mandi	√	√	x	√	√	x
11	IIT Library, Hyderabad	√	x	√	x	√	x
12	IIT Library, Gandhinagar	x	√	√	x	√	x
	Total	7	7	5	8	12	0

Table No.7. Indicates that 08 (66.66%) of IIT's, Librarians in India were in opinion that web 2.0 tools are useful for having better communication with the users. 07 (58.33%) Librarians given their opinion in favor of web 2.0 tools are important to provide quick services to the users. Another 07 (58.33%) Librarians said that web 2.0 tools are essential for developing digital library services, And 5 (41.66%) Librarians of IIT's, Libraries in India given their views in favour of web 2.0 tools are more useful to update the knowledge of the users.

Table No. 7, shows that maximum 12 (100%) IIT's, Library professionals in India were co-operating to the users for providing web 2.0 services.

Table No. 8: IIT's, Librarian in India faced the problems while using Web 2.0 tools.

Sr. No	Name of the IIT's, Libraries in India	Problems faced				
		I do not know how to use the tools	Not received proper training	Technical problems	Lack of access to the tools	Lack of support of L & P
1	IIT Library, Delhi	x	x	√	x	x
2	IIT Library, Kharagpur	x	x	√	x	x
3	IIT Library, Madras	x	x	√	x	x
4	IIT Library, Roorkee	x	√	x	x	x
5	IIT Library, Kanpur	x	x	√	x	x
6	IIT Library, Bombay	x	x	√	x	x
7	IIT Library, Indore	x	x	√	x	x
8	IIT Library, Jodhpur	x	x	√	x	x
9	IIT Library, Ropar	x	√	x	x	x
10	IIT Library, Mandi	x	√	x	x	x
11	IIT Library, Hyderabad	x	x	√	x	x
12	IIT Library, Gandhinagar	x	x	√	x	x

		Total	0	3	9	0	0

Table No.8, highlights that maximum 09 (75%) Librarians of IIT's Libraries in India were facing technical problems while using Web 2.0 tools, and 03 (25%) of them are facing the problem that means not receiving the proper training about how to use web 2.0 tools.

Table 9: Ranking of 20 IIT's, Libraries in India based on checkpoints used

Sr. No.	Name of IIT's, Libraries in India	Total Web 2.0 Tools used	Rank No.
1	IIT Library, Bombay	12	1
2	IIT Library, Hyderabad	10	2
3	IIT Library, Kharagpur	07	3
4	IIT Library, Madras	07	3
5	IIT Library, Delhi	06	4
6	IIT Library, Roorkee	06	4
7	IIT Library, GandhiNagar	06	4
8	IIT Library, Kanpur	05	5
9	IISER Library, Indore	05	5
10	IIT Library, Mandi	05	5
11	IIT Library, Jodhpur	02	6
12	IIT Library, Ropar	02	6

The table No 9 shows the Ranking of 12 IIT's, Libraries in India based on checkpoints used. IIT Library Bombay got 1st Rank, IIT library, Hyderabad got 02 rank application Index. IIT Library, Kharagpur, Madras, got 3rd in Rank, Roorkee, Delhi and Gandhinagar got 4 th rank.Kanpur, Indore , mandi got 5 rank and Jodhpar and Ropar got 6 rank,.

17. Suggestions

The surveyed the subsequent analysis of the data and the findings of the study have enabled the researcher to provide some practical suggestions for improving the use of Web 2.0 tools for library services expected from IIT's, libraries in India as follows:

- There is an urgent need to develop dynamic library websites which will compatible with web 2.0 technologies include web forms in each library 2.0 service.
- The library should run short term courses, organize training or instructional programs on Web 2.0 tools for the students, staff and faculty members.
- Web 2.0 tools, such as blogs, RSS, social networking sites and Wikis, should be used with well-defined purposes and standard norms. This step will improve the reliability of Web 2.0 tools and improve the participation of patrons in activities of libraries.
- Instruction should be given by the libraries for users about web 2.0 tools used in libraries on their homepages of Library.
- University Grant Commission (UGC) of India with the help of INFLIBNET formulate the national Web 2.0 standards to adopt web 2.0 tools and meet the new challenges of next generations library 2.0 and set up Web 2.0 content steering committees to strengthen their controls on information contents.

18. Conclusion:

In conclusion, it can be said that Web 2.0 tools can and has led a powerful paradigm shift in the dissemination and deliverance of education clearly. With the proliferation and adoption of Web 2.0 tools by IIT libraries in India, it is becomes important to help familiarize library users with these tools. Learning about such tools prepare library users for better communications and effective use of library resources and future employment avenues. However, use of these tools library may face challenges related to availability, accessibility and acceptance of technology and difficulty in enthusing and motivating library users to use and leverage such tools.

It is concluded from the study that the IIT's Libraries in India are well aware with the modern concept like Web 2.0 technology and its various tools. IIT's libraries in India always are using such type of various web 2.0 tools for to provide library services to its users. If we see the table number 04, we can find out that Social Networking like Facebook, Gmail, Rediffmail, MySpace, Blog, twitter, LinkedIn etc. are mostly used in the IIT's Libraries in India. As well as Instant messaging, YouTube, Video, Podcast, RSS feeds also becoming very popular day to day among the libraries and library users.

So it is the urgent need today that Librarians should try to adopt new web 2.0 technology and arrange proper training for library professionals so as they become able to provide better library services to the users.

19. Further Research Study:

More research should be undertaken on the following aspect of Web 2.0 tools and Libraries.
- ❖ To find out how these tools are being used by the academic and public libraries.
- ❖ Further studies need to be undertaken regarding the users' feedback of web 2.0 tools and Library 2.0 services by the academic libraries.

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