DESIDOC Journal of Library & Information Technology, Vol. 34, No. 5, September 2014, pp. 419-425 DOI: 10.14429/djlit.34.6784

Impact of Web 2.0 Technology Applications in Kerala University Library: Library Professionals' Perspective

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ABSTRACT

The web has transformed the ways by which people search, find, use and communicate information. Integrating the use of web 2.0 technology in libraries has become the subject of interest among library professionals. Web 2.0 technologies facilitate interactive information sharing, interoperability, user-centered design, dynamic content, openness, and user participation. This paper assesses the web 2.0 technology skills among library professionals in the University of Kerala. The study includes the library professionals employed in the Kerala university library system. The questionnaire was the instrument used for data collection. The study revealed that e-mail has an important impact on the level of web 2.0 use among library professionals. The majority of the library professionals did not have much idea about RSS feeds, content management, social bookmarking, podcast, wikis, etc. Analysis also showed that the library professionals in University of Kerala have a positive attitude towards the implementation of web 2.0 technologies in libraries. The paper concludes that Kerala university library is in a developing stage in its infrastructure and use of ICT.

Keywords: Web 2.0 technology, information and communication technology, library professionals, university library, Kerala

1. INTRODUCTION

Information and communication technology (ICT) has changed the traditional concept of library and information centres to a global information hub accessible anywhere and anytime. This is mainly because of the way the ICT tools and services such as web, networks, internet, etc., have influenced the library services. The ICT has made reasonable impact on library users and the way they want information as it provides new opportunities for information retrieval. The growing impact of ICT and web technologies has compelled the libraries to use these technologies effectively to provide services to the users according to their demands. With the support of University Grants Commission (UGC) and INFLIBNET, university libraries in India are on their way of modernisation through various programmes including UGC INFONET and e-journal consortium. Thus, it is important to note that there is an urgent need of skilled personnel for the implementation of latest technology-aided services in libraries. These issues make it necessary to study the new web 2.0 technology skills needed for the information professionals in this changing scenario. Here, an attempt has been made to assess the web 2.0 technology skills among library professionals in the University of Kerala.

Web 2.0 technologies have great potential to enhance the delivery of library services and to contribute to the professional development of library staff. According to Coombs[1], web 2.0 can be defined as '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'. Web 2.0 has created new opportunities for librarians to deliver best services to the users even if they are geographically distributed. The applications of web 2.0 technologies in libraries and library professionals are very well seen in the initiatives of Elsevier Inc. Elsevier has developed several applications that use the web services including Patient Research, RefWorks, Quosa, 2Collab, etc. Users can benefit from RSS on Engineering Village, Scopus and ScienceDirect. Elsevier also offers RSS alert service like Library Connect News, tagging service on Engineering Village and podcast service on ScienceDirect news[2].

Received 24 March 2014, Revised 31 July 2014, Online published 4 September 2014

The University of Travancore, which later became the University of Kerala, was established in 1937. The Kerala University Library (KUL), established in 1942, has over 3 lakh books and over 1000 bound volumes of journals[3]. Kerala University Library system comprises of the Central Library at Palayam, the Campus Library and College of Engineering Library at Kariavattom campus, 42 departmental libraries, and 3 study centre libraries (Alappuzha, Pandalam, and Kollam). The library system follows a decentralised pattern with a central library and departmental libraries attached to the teaching departments of the university. The library staff in KUL system are liable to work in the central and departmental libraries[4]. Recently, the 42 departments have been reorganised into eleven schools and these departments have independent libraries managed by library professionals. But libraries in a few departments do not have permanent library staff.

2. REVIEW OF RELATED LITERATURE

A number of studies have been conducted to explore the needed competencies of librarians to meet the challenges of web 2.0 technologies. Kumar & Ranjan[5] revealed that the main reasons of non-adaption of social media in libraries were lack of computer literacy, unavailability of computers, and unawareness about social media. Chakravarty & Chopra[6] described how the IIT and IIM libraries provide access to their collection and user support for all that access using web 2.0 technologies such as synchronous messaging, streaming media, blogs, wiki, and social networking. It was surprising to find that most of the IITs and IIMs are yet to integrate web 2.0 in their websites. Sawant[7] found that LIS instructors, in some Indian universities, have a low level of familiarity regarding the use of web 2.0.

Sudhakaran & Sivankutty[8] revealed that majority of the librarians possess web 2.0 skills and social networking, blogging and wikis are their choice of use. Mahalakshmi & Sornam[9] revealed that library professionals are aware of the few social networking sites and have fair knowledge in using social networking sites to market library services and resources. Joint[10] provided a summary of some of the legal and ethical issues associated with web 2.0 applications in libraries, with a brief retrospective view of some relevant literature. The concept of web 2.0 such as social networks, RSS feeds, blogs, streaming media, podcasts, wikis, tags, mashups, etc., were defined and the possible applications of these technologies in various library functions and activities were mentioned by Aqil, *et al.*[11].

Seena & Sudhier[12] in their study revealed that the professionals have relatively average level of skills in handling ICT related tasks and identified that lack of training as the main factor that hinders ICT use in libraries. Tyagi[13] in his study on the use of web 2.0 technology by engineering college library professionals observed that the respondents having good skill in usage of internet were more inclined towards the new technology. Kaushik & Arora[14] identified blogs on marketing of library services and examined their features during Jan-June 2009. Analysis showed that 6 blogs on marketing of library services are active and cover variety of features, frequency, file formats, web resource categories, and subjects including marketing. Majumdar[15] revealed that IIT, Kharagpur and ISI, Kolkata have applied web 2.0 tools in their respective library webpage and none of the state universities has applied web 2.0 tools in their webpage.

3. OBJECTIVES

The objectives of the study are to:

(i) Identify the choice of web 2.0 technology used by the library professionals under the study.

(ii) Assess the level/extent of skills of library professionals in using different types of web 2.0 technologies.

(iii) Evaluate the attitude towards the web 2.0 application by library professionals in the University of Kerala.

(iv) Suggest the measures for the improvement of web 2.0 technology skill development for the LIS professionals.

4. METHODOLOGY

The present study is confined to the library professionals of the central, campus, College of Engineering and departmental libraries in the University of Kerala. The study was based on survey method and in that questionnaire was used as the tool to collect data. A structured questionnaire was designed, keeping in view the basic objectives of the study. The questionnaire of the research consists of both optional type and statements in Lickert's 5-point scale. The study confined only to the library professionals; categories such as para-professionals, university administrators, etc., are excluded. Further, the study centre libraries located at Alappuzha, Pandalam and Kollam are not included. Out of 130 library professionals employed in the Kerala University Library system, questionnaires were distributed to 115 library professionals and 102 dully filled in questionnaires were received. The collected data was analysed using latest version of MS-Excel for appropriate statistical analysis and description.

Statistical technique such as Weighted Arithmetic Mean (WAM) was used for the analysis. The WAM technique was used to assess the level of variation among the variables. To give the due importance, a score called weight was assigned to variables considering the relative importance of each variable.

Based on relative quality of professionals' performance in using web 2.0 technologies, scores 1 to 5 were allotted (5 for excellent and 1 for extremely poor). WAM was computed by using following formula[16]:

$$\bar{X}_w = \frac{\sum wz}{\sum w}$$

where, '$\bar{X}_w$' is for weighted arithmetic mean; '*z*' is value of the item; and '*w*' is weight of the item.

5. ANALYSIS

5.1 General Information of Respondents

It was found that majority of library professionals who have responded to the survey in the University of Kerala were females (60.78 %) and 40 (39.22 %) were males. As far as the age of the respondents is concerned, 72 of them fall below 45 years and 30 were between 46-55 year of age, depicting that the young professionals are more in number which is effective to work with technical skills. Table 1 shows 61.76 % of the respondents have a PG degree and 38.24 % have basic degree in their basic subject. It is clear from the table that most of the library professionals (37.25 %) possess MA as basic qualification. A few of the professionals have additional technical qualifications like DCA (18.63 %), and PGDCA (9.80 %), in addition to the basic Post Graduate qualification. It is also evident from the table that the LIS professionals in the University of Kerala have high average of professional qualification. The basic qualification for entry cadre as a library professional in universities being degree with BLIS, it can be seen that professionals having only BLIS degree are least, while 59 (57.84 %) professionals possess MLIS, and 9 with PhD as the highest professional qualification. Half of the professionals have experience ranging 6-15 years. It was also found that 32 (31.37 %) respondents were Assistant Librarians, followed by 30 (29.41 %) Technical Assistants.

Table 1. Demographic information of respondents

S. No.	Profile of respondents		No. of respondents (%)
1.	Basic educational qualification	BA	22 (21.57)
		BSc	10 (9.80)
		BCom	7 (6.86)
		MA	38 (37.25)
		MSc	18 (17.75)
		MCom	7 (6.86)
		Total	**102**
2.	Professional qualification	BLIS	10 (9.80)
		MLIS	59 (57.84)
		MPhil	24 (23.53)
		PhD	9 (8.82)
		Total	**102**
3.	Professional experience	Below 5 years	15 (14.71)
		6-15 years	50 (49.02)
		16-25 years	34 (33.33)
		Above 26 years	3 (2.94)
		Total	**102**
4.	Designation	Assistant librarians	32 (31.37)
		Reference assistants	17 (16.67)
		Technical assistants	30 (29.41)
		Library assistants	23(22.55)
		Total	**102**

5.2 Extent of Different Types Web 2.0 Technology Skills

5.2.1 Use of Web 2.0 Technology Applications

It is important to know how well the web 2.0 technologies are made use of by LIS professionals to better serve the community. The library professionals were asked to indicate their choice of using different categories of web 2.0 technologies and the result is presented in Fig. 1. A study of the chart indicated that majority of them (93.14 %) have preferred e-mail as first choice of importance revealing that e-mail has an impact on the level of web 2.0 use among library professionals. This result is in line with the findings of Susan[17] who showed that most of the library professionals prefer e-mail, instant messaging and chat. It is worth to note that the web 2.0 technologies which can be effectively applied in library and information science field such as social bookmarking (37.25 %), RSS feeds (28.43 %) were not much been used by the professionals. The analysis also showed that the reference management system (24.51 %) and the content management system (19.61 %) were the least used web 2.0 technologies.

5.2.2 Skills for Managing Web 2.0 Tools and Services

With the development of web 1.0, web 2.0 and 3.0, many web-based services have been introduced in libraries to provide better services to users. Realising its importance, the study assessed the

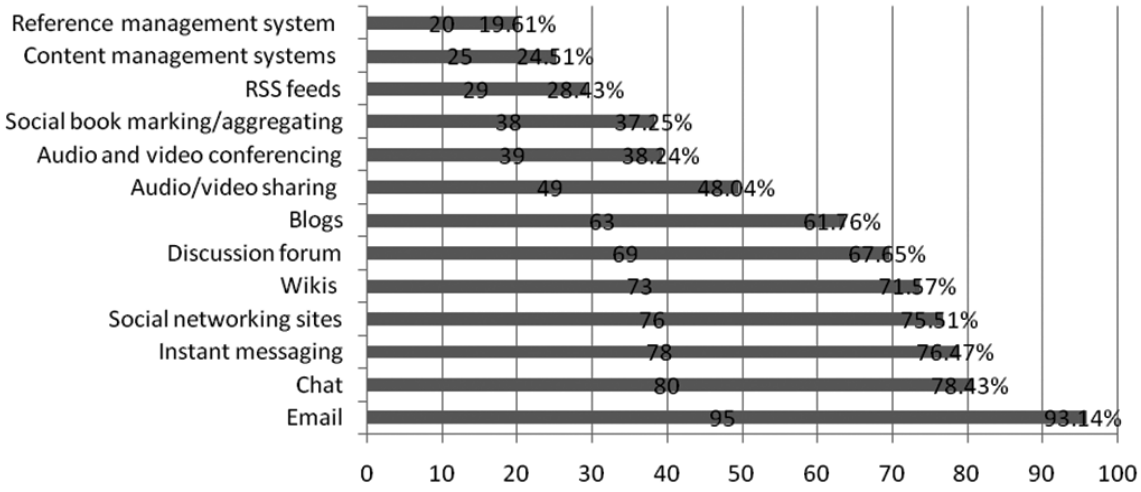

Figure 1. Use of web 2.0 technology applications by library professionals.

knowledge of LIS professionals on these technologies and the collected data have been tabulated in Table 2 with weighted arithmetic mean (WAM) values and rank order. Based on the 5-point Likert scale respondents' awareness was assessed on 13 web 2.0 technologies. To calculate WAM, a score/ weight was assigned to each scale viz., score of 5 was allotted to the scale 'Excellent', 4 for 'Above Average', 3 for 'Average', 2 for 'Below Average' , and 1 for 'Extremely Poor'.

It is evident from the table that most of the professionals in the University of Kerala are aware of the web 2.0 tools. But the fact that hindering the use of web 2.0 applications in libraries is the low level of skills of LIS professionals in handling them. Among the listed technologies the highest WAM value was shown in the use of e-mail (24.67) followed by instant messaging (21.93). Findings revealed that most of the LIS professionals possess relatively low level of skill in using social bookmarking and RSS feeds with WAM value 16.13 and 14.47 respectively. The results obtained were similar to those of Sudhakaran and Sivankutty[8] who revealed that library professionals have a low level of awareness in services like RSS,

Table 2. Skills for managing web 2.0 tools/services

S. No.	Web tools/services	Extremely poor (%)	Below average (%)	Average (%)	Above average (%)	Excellent (%)	WAM	Rank
1.	Blogging (e.g., Twitter, weblogs)	11 (10.78)	35 (34.31)	45 (44.12)	9 (8.82)	2 (1.96)	17.47	7
2.	Audio/video sharing (e.g., Flickr, Skype, YouTube)	18 (17.65)	30 (29.41)	40 (39.22)	10 (9.80)	4 (3.92)	17.2	8
3.	Audio and video conferencing	20 (19.61)	33 (32.35)	37 (36.27)	10 (9.80)	2 (1.96)	16.47	9
4.	E-mail	3 (2.94)	4 (3.92)	38 (37.25)	40 (39.22)	17 (16.67)	24.67	1
5.	Instant messaging	6 (5.88)	18 (17.65)	35 (34.31)	33 (32.35)	10 (9.80)	21.93	2
6.	Chat	8 (7.84)	16 (15.69)	40 (39.22)	28 (27.45)	10 (9.80)	21.47	3
7.	Discussion forum (e.g., Lisforum, Nmlis)	11 (10.78)	30 (29.41)	38 (37.25)	19 (18.63)	4 (3.92)	18.73	6
8.	RSS feeds	29 (28.43)	42 (41.18)	22 (21.57)	7 (6.86)	2 (1.96)	14.47	11
9.	Wikis (eg.Wikipedia , LISWiki)	10 (9.80)	18 (17.65)	47 (46.08)	23 (22.55)	4 (3.92)	19.93	5
10.	Social book marking/ aggregating (e.g., Delicious, FriendFeed)	24 (23.53)	30 (29.41)	37 (36.27)	8 (7.84)	3 (2.94)	16.13	10
11.	Social networking (e.g., Twitter, Face book)	6 (5.88)	22 (21.57)	39 (38.24)	30 (29.41)	5 (4.90)	20.8	4
12.	Content management systems e.g. (Drupal, Joomla)	30 (29.41)	42 (41.18)	22 (21.57)	7 (6.86)	1 (0.98)	14.2	12
13.	Reference management system (e.g., zotero, Mendeley)	35 (34.31)	41 (40.20)	20 (19.61)	5 (4.90)	1 (0.98)	13.47	13

social bookmarking and podcast. Analysis further showed that the lowest rank has been arrived at the respondents' knowledge in reference management system (rank-12) and content management system (rank-13) and this reveals that the LIS professionals need training especially in these areas. It is also worth to note that the number of respondents indicated their skill as 'excellent' in using various web tools is only <20 in number. Calculation of WAM for the first two entries i.e., 'Blogging' and 'Audio/ Video sharing' has been shown in Table 3.

Table 3. Calculation of WAM for web 2.0 tools

Scale	*z*	Weight (*w*)	*wz*
Blogging			
Extremely poor	11	1	11
Below average	35	2	70
Average	45	3	135
Above average	9	4	36
Excellent	2	5	10
Total		**$\sum w = 15$**	**$\sum wz = 262$**
WAM		**$\sum wz / \sum w = 17.47$**	
Audio/video sharing			
Extremely poor	11	1	11
Below average	35	2	70
Average	45	3	135
Above average	9	4	36
Excellent	2	5	10
Total		**$\sum w = 15$**	**$\sum wz = 258$**
WAM		**$\sum wz / \sum w = 17.2$**	

5.2.3 Respondents' Attitude Towards Web 2.0 Applications

Table 4 reveals the attitude of library professionals towards the use of web 2.0 technologies in libraries and the respective WAM values with rank. For the analysis of respondents' attitude, score 5 was assigned to most favorable response and score 1 for least favorable in the case of positive statement. For negative statement the scoring was reversed.

It is clear from Table 4 that majority (29.53) of the professionals were strongly agreed that web 2.0 applications enhance communication with WAM and rank 1, followed by 29.07 web 2.0 enhance professional networking of librarians with WAM. This result is somehow in line with the findings of Khan & Bhatti[18] who revealed that web 2.0 technology like social media helps in knowledge sharing and locating information in libraries. It is observed that there are only slight variations in the values of WAM in determining the ranks assessed by the respondents for their attitudes. This supports the fact that the library professionals in University of Kerala have

Table 4. Respondents' attitude towards web 2.0 applications

S. No.	Attitude	Strongly agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly disagree (%)	WAM	Rank
1.	Enhance file sharing	40 (39.22)	52 (50.98)	6 (5.88)	4 (3.92)	0	28.93	3
2.	Enhance marketing of library products and services	30 (29.41)	59 (57.84)	9 (8.82)	4 (3.92)	0	28.07	6
3.	Enhance communication	43 (42.16)	52 (50.98)	6 (5.88)	1 (0.98)	0	29.53	1
4.	Enhance professional networking of librarians	42 (41.18)	48 (47.06)	10 (9.80)	2 (1.96)	0	29.07	2
5.	Enhance public relation	31 (30.39)	59 (57.84)	9 (8.82)	3 (2.94)	0	28.27	4
6.	Increase user awareness of library collections and services	33 (32.35)	54 (52.94)	12 (11.77)	3 (2.94)	0	28.2	5
7.	Increase feedback about library services	31 (30.39)	57 (55.88)	8 (7.84)	4 (3.92)	2 (1.96)	27.8	7
8.	Help to gain better understanding of users' information requirement	28 (27.45)	38 (37.25)	26 (25.49)	8 (7.84)	2 (1.96)	25.87	8
9.	Using web technologies will create data security problems	8 (7.84)	39 (38.24)	20 (19.61)	33 (32.35)	2 (1.96)	19.2	9
10.	Using web technologies will create copyright issues over a period of time	19 (18.63)	48 (47.06)	23 (22.55)	12 (11.76)	0	15.47	10

a positive attitude towards the implementation of web 2.0 technologies in libraries. Further, the two negative aspects listed constituted the last ranks, since the WAM has arrived at 19.2 and 15.47. Calculation of WAM for the attitude of professionals towards positive and negative statements on web 2.0 has been shown in Table 5.

Table 5. Calculation of WAM for web 2.0 attitude

Scale	*z*	Weight (*w*)	*wz*
Web 2.0 enhance file sharing			
Strongly agree	40	5	200
Agree	52	4	59
Undecided	6	3	18
Disagree	4	2	8
Strongly disagree	0	1	0
Total		**$\sum w = 15$**	**$\sum wz = 434$**
WAM		**$\sum wz / \sum w = 28.93$**	
Web technologies will create data security problems			
Strongly agree	81	1	8
Agree	39	2	78
Undecided	20	3	60
Disagree	33	4	132
Strongly disagree	2	5	10
Total		**$\sum w = 15$**	**$\sum wz = 288$**
WAM		**$\sum wz / \sum w = 19.2$**	

6. SUGGESTIONS

The numerous views and comments offered by the library professionals have enabled the investigator to offer some feasible suggestion for the successful application of ICT and web 2.0 technologies in libraries:

(i) The LIS professionals should provided with the training for online communication tools (blog, podcast, wikis, RSS, content management, etc.) to make them confident users. This also empowers librarians with high specialised knowledge and skills.

(ii) Sufficient funds should be made available by the authorities for developments of ICT infrastructure, digital resource development, and application of ICT-enabled services in university libraries.

(iii) The authorities need to review their policies regarding the implementation of technological developments in libraries.

(iv) Library users should also be given motivation by organising orientation programmes and user awareness programmes in ICT.

(v) A new model curriculum for information science courses in universities should be devised by integrating the traditional and modern knowledge and applications.

7. CONCLUSIONS

In the changed scenario of web technology and scholarly communications, university libraries should manage the research output, organisational knowledge and information resources that support R&D activities by using library blogs, library websites, institutional repositories, etc. The web 2.0 technologies can be used for developing interpersonal cooperation among librarians and to get new information on any subject. Librarians mainly use these technologies for sending email, chat and social networks. The web 2.0 technologies which can be effectively applied in library and information science field such as blog, wikis, RSS, content management, social bookmarking, podcast, etc., are not much used by the professionals satisfactorily. Social networking sites generally appeal to younger generation. Thus many sections of the population particularly the elderly users will not be reached by such efforts. The main hurdles faced by library professionals in acquiring the skills in using these technologies are lack of proper training and lack of proper infrastructure, planning and supervision. As services for users increasingly come to expect interactive online services in all sphere of life, libraries must keep pace with developments to ensure responsive services for the future.

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