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# Knowledge and use of Web 2.0 by librarians in university libraries of East Azerbaijan, Iran

Knowledge  
and use of  
Web 2.0

1013

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## Abstract

**Purpose** – The present study aims to investigate levels of awareness and use of Web 2.0 tools by librarians in the university libraries of East Azerbaijan (EA) in Iran and to determine how librarians use these tools in everyday life.

**Design/methodology/approach** – A Web-based questionnaire was used to collect data from 38 per cent librarians in the university libraries of EA.

**Findings** – The research findings indicate that the librarians were more familiar with Web 2.0 tools such as wikis and blogs. While librarians widely use blogs and wikis, tools such as social bookmarking, social networks, RSS feeds, instant messaging and digital maps were less frequently used. Results obtained from present study indicated that librarians use Web 2.0 tools mostly to communicate with friends and family, to keep up-to-date, to collaborate with colleagues and for curiosity and fun. Also, librarians believe that Web 2.0 tools can be used mostly for sharing information about library resources. Internet filtering, lack of access to high-speed internet and lack of training were the major obstacles for Web 2.0 adoption by librarians.

**Originality/value** – This study is a useful source for implementing Web 2.0-based technology in libraries. Also, this study will help managers understand the librarians' needs about Web 2.0 to improve their library services.

**Keywords** Academic libraries, Web 2.0, Social media, Librarians

**Paper type** Research paper

## Introduction

The internet offers a wide range of free, professional tools that can be adapted by libraries to be used for a variety of purposes. In recent years, a number of digital and networking tools have emerged on the internet. These digital applications, enabling interaction, collaboration and sharing among users, are generally referred to as Web 2.0 (Birdsall, 2007). The term Web 2.0 refers to a second generation of design and development that facilitates communication, secure information sharing, interoperability and collaboration between a host and the public over the internet. Web 2.0 as a term was officially introduced in 2004 by Dougherty and O'Reilly of O'Reilly Media Inc., renowned for its technology-related conferences and respected books (Anderson, 2007). Libraries and librarians began to discuss Web 2.0 services soon after the term was developed in 2005 (Chad and Miller, 2005). The main characteristics



of Web 2.0 are user-created websites, self-publishing platforms, tagging control over data and added value to applications (O'Reilly, 2005). The development of Web 2.0 indicates a major shift in thinking as the "new" Web allows anyone to contribute content, thus increasing the significance of individual users, and thereby relying on participation (wisdom of the crowd, architecture of participation) and a shift toward collaborative effort (Thompson, 2008). Examples of Web 2.0 applications are blogs, instant messaging (IM), RSS feeds, wikis, social bookmarking and podcasts. Web 2.0 tools are often considered to be communication facilitators.

Recently, Web 2.0 has influenced the way that libraries, museums, archives and other cultural heritage organizations carry out their operations. Web 2.0 plays a key role in the dispensation of information, knowledge and communication services in university libraries. The concept of Library 2.0 is deeply rooted in the use and application of Web 2.0 systems. The term Library 2.0 was coined by Casey in September 2005 (Casey and Savastinuk, 2006). Library 2.0 refers to a growing area of interactive and social tools in libraries. As librarianship strives to evolve in response to the needs of the internet generation, use of Web 2.0 has become an indispensable tool in the work of library professionals. Rehman and Shafique (2011) stated that "Web 2.0 technologies are blessings for library professionals, as libraries can design attractive services using Web 2.0 applications". Web 2.0 tools enable libraries to reach out to a larger number of users, entice potential patrons to use library resources and services and deliver improved patron-driven services (Casey and Savastinuk, 2006). They also motivate the user community and broaden participation by attracting an additional user base, which thus expands the ways to accomplish the traditional work of academic libraries (Neal and Jaggars, 2010). Maness (2006) wrote that Library 2.0 is "the application of interactive, collaborative, and multi-media web-based technologies to web-based library services and collections". Previous research indicated that Web 2.0 tools affected librarians in the library and information science (LIS) field. While many studies have been conducted worldwide on Web 2.0, most of these studies focus on one particular Web 2.0 tool, such as Facebook, blogs, Flickr, IM, wikis and so on.

This study discerns some noticeable patterns regarding usage, trends and adoption of a variety of Web 2.0 tools by librarians in East Azerbaijan (EA) academic libraries and notes that Web 2.0 is a useful source for implementing Web-based technologies in the EA academic libraries.

The study will provide academic libraries with helpful information to better meet their users' needs by showing how to effectively apply Web 2.0. Additionally, this study will help library managers understand librarian needs to improve their library services and information centres. Hence, the main research question revolves around how librarians in EA can combine Web 2.0 tools successfully with their own professional services. Thus, the aim of the present research is to investigate the awareness and use of the most popular Web 2.0 tools by librarians in the university libraries of EA in Iran. To do so, the following research questions were raised:

- RQ1.* To what extent are librarians of EA university libraries aware of Web 2.0 tools?
- RQ2.* To what extent do EA librarians use Web 2.0 tools?
- RQ3.* For what purpose(s) do these librarians use Web 2.0 tools in everyday life?

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- RQ4. For what purpose(s) can EA librarians use Web 2.0 tools in academic libraries?  
RQ5. What are some of the barriers that EA librarians encounter in using Web 2.0 tools?

### Literature review

The use of Web 2.0 tools in the academic libraries is rapidly increasing (Chew, 2008). Various studies have shown that academic libraries have been actively engaged in the utilization of social Web tools, mainly to promote library services and resources, to provide information and to interact with patrons (Birdsall, 2007; Chad and Miller, 2005; Curran *et al.*, 2007; Fernandez, 2009; Frumkin, 2005; Joint, 2009; Kesselman, 2008; Levy, 2009). Moreover, there are numerous empirical studies on the applicability of specific Web 2.0 tools in academic libraries, including Facebook (Kim and Abbas, 2010; Matthews, 2007; Stuart, 2010), Twitter (Edda, 2014; Garoufallou and Charitopoulou, 2011; Han and Liu, 2010; Harinarayana and Raju, 2010; Mahmood and Richardson, 2011), RSS feeds (Tripathi and Kumar, 2010), blogs (Engard, 2006; Wyatt and Hahn, 2011), wikis (Stephens and Collins, 2007), IM (Chua and Goh, 2010; Kim and Abbas, 2010; Redden, 2010;) and bookmarking and tagging (Harinarayana and Raju, 2010), and podcasts (Brookes, 2010).

Other studies reported that Web 2.0 tools are mainly adopted by libraries in developed countries. For instance, Chua and Goh (2010) studied the widespread use of Web 2.0 applications in higher education and public libraries. They examined the websites of 120 public and academic libraries in North America, Europe and Asia. The authors reported that blogs and RSS are the most popular Web 2.0 tools, followed by IM. Social networking service (SNS), wiki and tagging were less popular. Also, North American libraries engage more in Web technology than European and Asian libraries. The study concluded that the overall quality of a website is considered high when Web 2.0 applications are included. Boateng and Liu (2014) studied the use of Web 2.0 technologies and trends at the top 100 US academic libraries as exemplified through their library websites. They found that wikis were the least used Web 2.0 tool. The blog was the second most popular tool, after RSS and IM/Chat. Vodcasts and podcasts had, respectively, 47 and 46 per cent participation rates. Similarly, Xu *et al.* (2009) investigated 81 academic library websites in the state of New York, where 42 per cent of the studied academic libraries used one or more Web 2.0 tools. The authors reported that IM, blogs and RSS were the most popular Web 2.0 tools for the users. In fact, their study developed an optimistic picture of academic libraries in their progressive use of tools in the rapidly changing technological environment. Rod-Welch (2012) studied 125 research libraries in North America to determine the incorporation of reference and social networking tools in their library's website. The study indicated the high importance given to the appropriate placement of reference and social networking tools on ARL websites.

Nguyen (2008) provided an overall picture of the application of Web 2.0 technologies in university libraries in Australasia. The findings showed that at least two-thirds of Australasian university libraries deployed one or more Web 2.0 technologies, although only four Web 2.0 tools were widely used for specific purposes with some basic features. Linh (2008) investigated the contents of 47 academic library websites in Australia and New Zealand. He found that there was a general interest in Web 2.0 tools, but that the

overall level of implementation was low. The most popular tools were RSS and IM. All of the technologies and tools were implemented with only their basic features available.

Research studies in developing countries show that the application of Web 2.0 tools is generally low among libraries and librarians. As an example, [Han and Liu \(2010\)](#) conducted a survey and content analysis of library websites of 38 top Chinese universities and concluded that more than two-thirds of the libraries use one or more Web 2.0 applications. Catalogue 2.0 and RSS were the most widely used, while IM, blogs, SNSs and wikis were the least used applications. [Qutab and Mahmood \(2009\)](#) investigated websites of 52 academic, special, public and national libraries in Pakistan. They found that Pakistani libraries have developed websites over the past few years, but they are few in number. Also, no instruction was available to establish library websites and no scholarly literature on the subject was found in Pakistan.

[Wood \(2009\)](#) investigated the state of the 23 academic library websites in South Africa. He determined some problems with the websites, as well as providing some examples of best practices. In Tanzania, [Lwoga \(2012\)](#) examined the suitability of the information systems model in the adoption of Library 2.0 technologies among undergraduate students in the African context. Different studies in some developing countries indicated that libraries have just recognized the potential of Web 2.0 tools, and they have started to adopt this technology. It seems necessary for libraries in the developing world to provide their services more efficiently through Web 2.0 tools.

Studies have also reported that librarians use Web 2.0 tools for different services. For example, [Garoufallou and Charitopoulou \(2011\)](#) emphasized that Web 2.0 has an important role in library science and suggests that the knowledge and implementation of Web 2.0 should begin in LIS schools to prepare future library staff for the new challenges ahead. They consider acquiring new knowledge and facilitation with the assignments as advantages of using Web 2.0. [Baro et al. \(2012\)](#) investigated the level of awareness and use of Web 2.0 tools by librarians in university libraries in Nigeria. The study revealed that librarians use Web 2.0 tools mostly for reference services online, announcing library news/events, training resources and image and video sharing. [Munatsi \(2010\)](#) pointed out that social networking allows sharing of content through collaboration, communication and the creation of online communities. [Virkus \(2008\)](#) described the experiences of the Institute of Information Studies of Tallinn University. He found that Web 2.0 is influencing the way in which people learn, access information and communicate with each other. [Pinto and Manso \(2012\)](#) analyzed common features of the virtual reference services provided by European and American libraries to evaluate the service from the user perspective through considering the potential of Web 2.0 applications. The research showed that certain features of virtual reference services which were undervalued or had not attracted research interest required a technological shift in the services provided to users by academic communities involved in that study.

There are various barriers that librarians face in their efforts to adopt Web 2.0. These barriers may be associated with such factors as limited infrastructure and other information-based technologies, lack of library-centered social media policies and lack of funding for training and resources ([Collins and Quan-Haase, 2013](#)). Also, reduced availability of facilities, such as computers with internet access, lack of time and lack of skills, was considered as a barrier in the use of Web 2.0 tools by librarians in Nigeria ([Baro et al., 2012](#)). [Isfandyari-Moghaddam and Hosseini-Shoar \(2014\)](#) identified factors affecting the adoption of Web 2.0 tools by librarians of academic libraries in Hamedan,

Iran. They identified ten barriers in this regard. The most important factors were: job conditions, changeability, skills, competitiveness and saving time.

Most studies have shown that Web 2.0 plays a key role in facilitating information sharing, collaboration and communication between librarians and patrons. [Brevik \(2006\)](#) stated that:

Library 2.0 is the natural evolution of library services in a way that the library user is in control of how and when she gets access to the services she/he needs and wants.

It is essential for libraries to integrate these library services technologies to improve their quality of services. However, regarding the use of Web 2.0 tools in EA university libraries, no similar studies have been conducted. Moreover, this study provides librarians and managers in EA with helpful information to better meet their user needs by applying Web 2.0 tools.

### Research objectives and methodology

The aim of this research is to investigate the awareness and use of popular Web 2.0 tools used by librarians in the state university of EA. EA is located in Iran, bordering Armenia and the Republic of Azerbaijan. The capital of EA is Tabriz. The area has 15 private and four state universities. The four state universities are the Sahand University of Technology, Tabriz University of Medical Sciences, University of Tabriz and Azerbaijan University of Tarbiat Moallem ([Table I](#)).

A scholar-made questionnaire was used to gather the data ([Appendix 1](#)). The questionnaire was designed through reviewing related literature ([Baro et al., 2012](#); [Garoufallou and Charitopoulou, 2011](#)) and research questions. It was used to collect data on the awareness and use of Web 2.0 tools among librarians. The questionnaire consists of 22 closed and open questions which provide more clear-cut categories to measure knowledge, skill, attitude and behavior. The questionnaire was reviewed by nine experts for its validity in terms of structure and content. Its reliability was determined by conducting a pilot study. As a result, Cronbach's alpha was equal to 0.95, and thus, the reliability of the questionnaire was confirmed. The questionnaire was sent to 38 librarians in the central libraries of state universities via e-mail beginning in December 2013. Their e-mail addresses were collected from the library websites.

To increase the response rate, researchers sent librarians e-mail reminders and motivated them to participate. Data collection was completed by February 2014. Further, 35 respondents responded to the questionnaire. The state academic libraries were selected as being the largest libraries in Iran. The librarians of four state academic libraries were selected as participants, as they are the most relevant and closely related to the objectives of the study. The collected data were analyzed with SPSS (version 16). The data gathered are presented in the form of tables and bar charts.

University	No. of librarians
Sahand University of Technology	6
Tabriz University of Medical Sciences	8
University of Tabriz	15
Azerbaijan University of Tarbiat Moallem	9
Total	38

**Table I.**  
Number of librarians  
at each university

**Findings**

*Demographic characteristics of respondents*

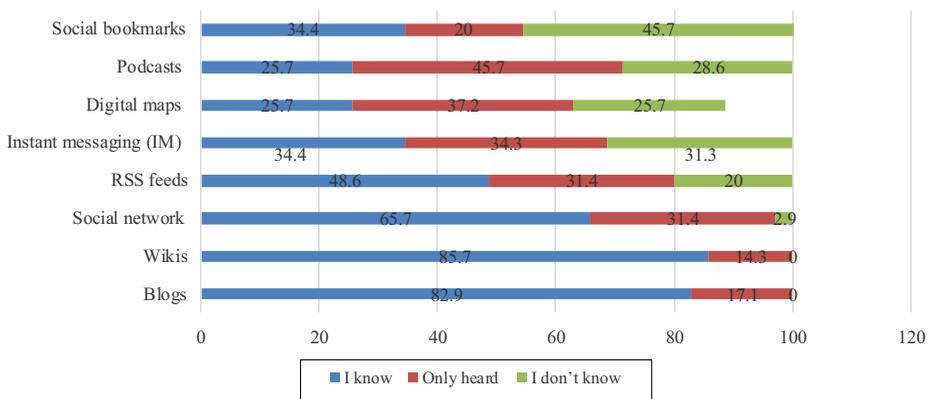
Of the 35 respondents, 15 were male and 20 were female. One of the participants was under 30 years of age, six participants were aged 31-35 years, eight were aged 37-40 years, 14 were older than 41 years and six did not provide their age. The participating librarians were asked to state their academic degree. In total, 26 respondents had a BA, 8 had obtained an MA and 1 had a PhD, with all degrees in the LIS field. Demographic data of the respondents are presented in [Table II](#).

*Awareness of Web 2.0 tools*

Librarians were asked to identify their level of awareness about various Web 2.0 tools ([Figure 1](#)). Wikis were the most familiar tool with librarians (85.7 per cent), whereas none (0 per cent) was unaware of wikis, and 14.3 per cent mentioned that they have only heard about wikis. Blogs were well known among the librarians with the majority having used them (82.9 per cent), whereas only a few (17.1 per cent) were only aware of blogs. More than half (65.7 per cent) of the librarians indicated that they know about social networks,

Category	No.	(%)
<i>Gender</i>		
Male	15	42.9
Female	20	57.1
<i>Age (years)</i>		
Under 30	1	2.9
31-35	6	17.1
36-40	8	22.9
Older than 41	14	40.0
<i>Educational level (diploma)</i>		
BA	26	74.1
MA	8	23.0
PhD	1	2.9

**Table II.** Descriptive information about respondents



**Figure 1.** Awareness level of Web 2.0 tools

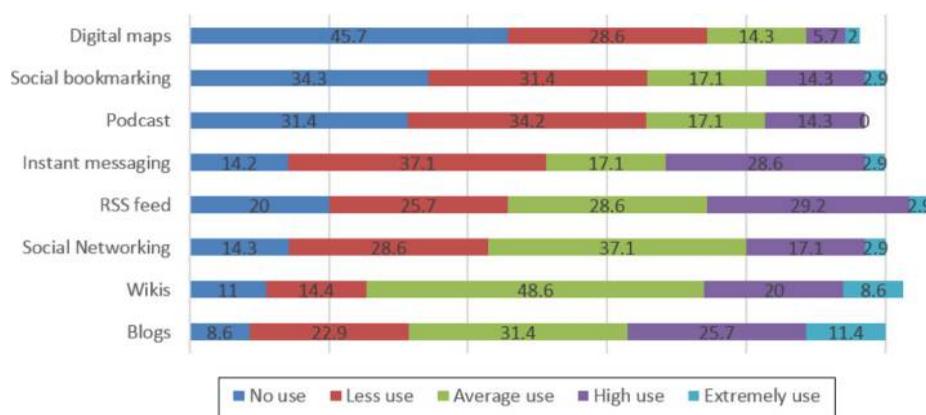
whereas 2.9 per cent indicated that they did not know about social networks, and 31.4 per cent had only heard about social networks. Nearly half of the librarians (48.6 per cent) indicated that they knew about RSS feeds, with almost a third (31.4 per cent) being aware of the tool and only a few (20.0 per cent) were unaware of the RSS feeds. It is worth noting that the same percentage of librarians (34.4 per cent) stated that they knew about IM and social bookmarks. Digital maps and podcasts were the least known Web 2.0 tools with only a 25.7 per cent awareness level (Figure 1).

*Use of Web 2.0 tools by librarians*

The next question investigated the frequency of use of Web 2.0 tools. Librarians were asked to rate their use of different Web 2.0 tools using a scale from 1 to 5, where 1 indicated no use and 5 showed frequent use of it (Figure 2). As was expected, the results showed that blogs were the most frequently used Web 2.0 tool. These were used by 11.4 per cent of librarians, followed by wikis with 8.6 per cent. It would appear that librarians who were familiar with wiki and blogs tend to use them as well. On the other hand, there was little use of tools such as social bookmarking, social networks, RSS feeds, IM (2.9 per cent) and digital maps (2.0 per cent). It should be noted that none of the librarians used podcasts.

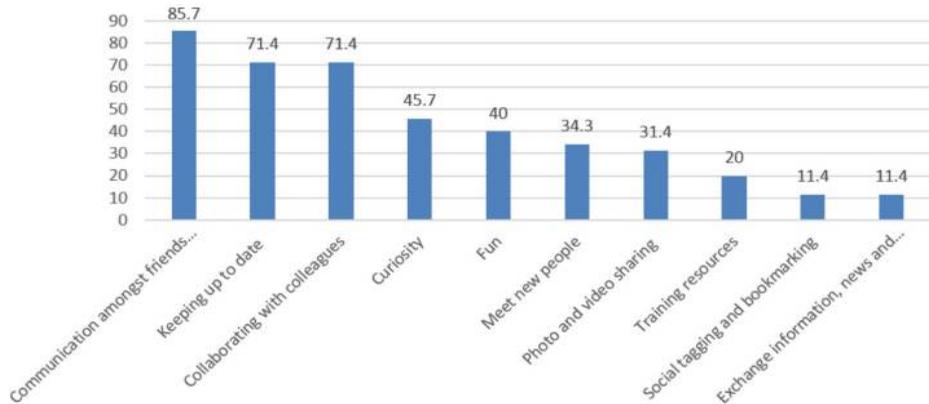
*Purposes for which Web 2.0 tools were used by librarians in everyday life*

Librarians were asked about their reasons for using Web 2.0 tools (Figure 3). The majority of the studied librarians (85.7 per cent) indicated that they use Web 2.0 tools for “communication among friends and family”. Next most frequent were those who indicated that Web 2.0 tools were used for both “keeping up-to-date” and “collaborating with colleagues” (71.4 per cent). “Curiosity” and “fun” were motives with 45.7 and 40.0 per cent, respectively, of the respondents, followed by “meet new people” (34.3 per cent), whereas 31.4 per cent indicated that they use “photo and video sharing sites”. Further, 20 per cent indicated that Web 2.0 tools were used for “training resources”. Finally, 11.4 per cent used Web 2.0 tools to “exchange information, news and ideas about [their] personal life”, followed by the same percentage for “social tagging and bookmarking”.



**Figure 2.**  
Use of Web 2.0 tools  
by librarians

**Figure 3.**  
Purpose for using  
Web 2.0 tools



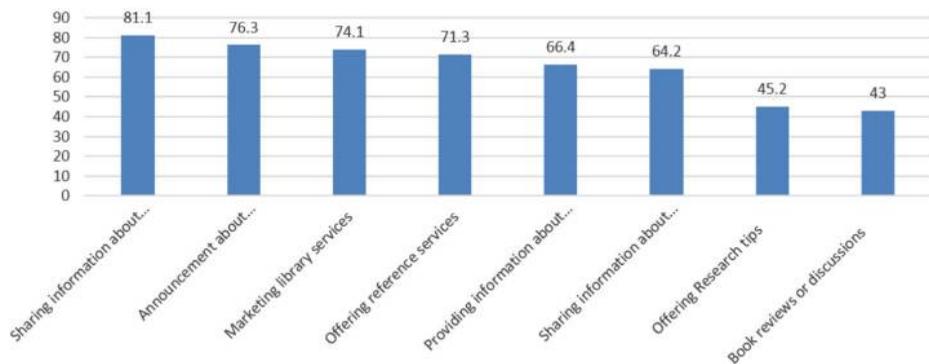
#### *Purposes for which Web 2.0 tools were used by librarians in academic libraries*

Librarians were next asked about their reasons for using Web 2.0 tools in academic libraries. Sharing information about library resources (81.1 per cent) was the largest response. Announcements about workshops and exhibitions were the next largest (76.3 per cent). Marketing of library services garnered 74.1 per cent. Offering reference services (71.3 per cent) followed, then sharing information about hours of operation and holidays (64.2 per cent). As depicted in Figure 4, some of the librarians (66.4 per cent) suggested that they used Web 2.0 tools to provide information about library e-journals and e-resource databases, followed by research tips (45.2 per cent) and book reviews or discussions (43.0 per cent).

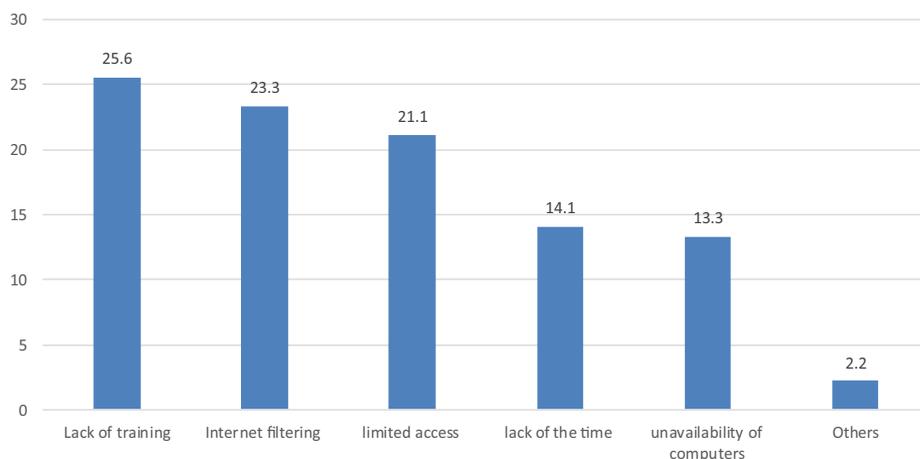
#### *Barriers librarians face when using Web 2.0 tools*

There are limits to be overcome in the implementation and use of Web 2.0 tools in the workplace. Librarians were asked to indicate the obstacles they encountered in using Web 2.0 tools (Figure 5). Lack of training (25.6 per cent) was identified as the most inhibiting barrier to the use of Web 2.0 tools by librarians, followed by internet filtering (23.3 per cent) and limited access to high-speed internet (21.1 per cent). Additionally, the unavailability of computers (13.3 per cent) and lack of time to study Web 2.0 tools (14.4 per cent) were noted.

**Figure 4.**  
Purposes for using  
Web 2.0 tools in  
academic libraries



**Figure 5.**  
Barriers librarians  
face in using Web 2.0



### Discussion and future research

The findings of the present study showed that librarians in EA are more familiar with wikis and blogs. This finding is in line with several other studies. For example, [Han and Liu \(2010\)](#) reported that blogs were the third most common used Web 2.0 tool with 13 per cent of Chinese university libraries offering it. The findings of [Xu \*et al.\* \(2009\)](#) showed that blogs were the most popular Web 2.0 tools. According to [Virkus \(2008\)](#), blogs were one of the most highly favored Web 2.0 tools.

Use of Web 2.0 tools varies from one place to another. For example, [Xu \*et al.\* \(2009\)](#) found that IM and RSS were the Web 2.0 applications used extensively by academic libraries in New York state in the USA. [Harinarayana and Raju \(2010\)](#) reported that IM was the most used tool for virtual reference services in top US academic libraries, and that podcasts and vodcasts have been used successfully in delivering library Web-based services. Moreover, [Nguyen \(2008\)](#) observed that among Web 2.0 technologies used by Australasian university libraries, RSS was the most widely used technology. The present study revealed that the respondent librarians do not use and are not familiar with IM, RSS, social bookmarking and podcasts. The means of increasing awareness of these tools need to be created. Training workshops organized for librarians should help raise the level of awareness and usage among librarians in university libraries ([Baro \*et al.\*, 2014](#)).

The results show that the most frequently used Web 2.0 tools were blogs and wikis. Social networking, RSS feeds, IM and digital maps were indicated to be least used by the librarians in EA. This finding is rare, as other studies frequently report that the most frequently used Web 2.0 tool by academic librarians is Facebook. For example, [Baro \*et al.\* \(2012\)](#) mentioned that Facebook is the most used Web 2.0 tool in university libraries. Also, [Harinarayana and Raju \(2010\)](#) found that Facebook was the most popular, being used in three libraries in their investigation of university library websites in India. The current findings showed that there was little use of social network types of Web 2.0 tools. It should be noted that the filtering of SNSs, such as Facebook and Twitter, could be responsible for this low use by librarians in EA.

The present study showed that the majority of the librarians used Web 2.0 tools for communication among friends and family, keeping up-to-date and collaborating with their colleagues. King (2007) also found similar results. Librarians were motivated to use Web 2.0 tools for meeting new people, fun, curiosity and photo and video sharing. It is clear that they have ignored the possible advantages of Web 2.0 capabilities in terms of social tagging; bookmarking; and exchanging information, news and ideas about their personal lives. These findings agree with the findings of Garoufallou and Charitopoulou (2011) who noted that most of the students think that Web 2.0 tools are for entertainment. It is important for librarians to appreciate the power of Web 2.0 tools in their professional lives to use them to strengthen networking between their library and its patrons.

The majority of the librarians in this study feel that Web 2.0 tools can play a vital role in academic libraries. Librarians believe that they can use Web 2.0 tools for sharing information and announcing library workshops and exhibitions. The results suggest that Web 2.0 has been seen as a potential tool for delivering information to students. Librarians in EA see the need to use Web 2.0 tools for effective online reference services, sharing information, informing users about workshops and exhibitions and marketing library services. These findings agree with the results of Han and Liu (2010) who reported that the use of SNSs in top Chinese university libraries was mainly for publicizing library events, accessing library resources, providing reference services and sharing photos. Also, Baro *et al.* (2014) revealed that librarians in Africa use Web 2.0 tools for the purpose of announcing library news/events, online reference services, training resources, blogging and image and video sharing with users.

Lack of training was mentioned by the majority of the librarians as a barrier that will hinder them from using Web 2.0 tools. Library administrators should send librarians to attend short workshops or seminars on the topic. Mansor and Idris (2010) found that the majority of the respondents indicated that training on the various applications of Web 2.0 tools is important. Baro *et al.* (2014) mentioned that lack of skills was a main obstacle toward the adoption of Web 2.0 technologies by librarians in university libraries in Africa.

Internet filtering was indicated as a one of the barriers in using Web 2.0 tools by the librarians in EA. Access to social networks, such as Twitter and Facebook, is banned in Iran. It is important for librarians in Iran to be familiar with unfiltered SNSs.

Respondents claimed that lack of access to high-speed internet is a challenge when using Web 2.0 tools. Access to high-speed internet in academic libraries is a necessity for the use of Web 2.0 tools. This agrees with Rehman and Shafique (2011) and Baro *et al.* (2012). They mentioned that lack of internet facility and unavailability of computers were the main hindrances toward the adoption of Web 2.0 tools in Pakistan and Nigeria.

Web 2.0 is used to collaborate, enable people to share knowledge and information, work on projects and create new information (Anderson, 2007). The literature has provided evidence that Web 2.0 technologies are being used in library settings worldwide. Libraries in Iran need to become part of the popular Web 2.0 universe to effectively serve their patrons. The adoption of these tools showed that Web 2.0 technologies can be used to enhance the delivery and promotion of library services without undermining their quality.

This study has limitations. The study findings may not be widely generalized because this article is based on a case study of the integration of Web 2.0 tools into the

library functions of EA. Because it investigated only four state academic libraries and 35 respondents, the results may not represent all the academic libraries in EA or elsewhere.

Web 2.0 tools are the “next big thing” in academic libraries because they offer social networking capabilities in providing information and services to library users (Gross and Leslie, 2008). Mahmood and Richardson (2011) declared that all libraries have understood the importance of adopting and using various tools of Web 2.0. The trend shows that most libraries will adopt user-participation Web 2.0 tools to promote themselves, improve library services and highlight resources to patrons. Further research should be undertaken to examine how librarians can use Web 2.0 tools to offer services and the use of Web 2.0 tools among library users (such as students). Additionally, the impact of demographic characteristics on awareness and use of Web 2.0 tools among the librarians in Iran should be examined.

### Conclusions

The most frequently used Web 2.0 tools were blogs and wikis. Other Web 2.0 tools, including social bookmarking, social networks, RSS feeds, IM, podcasts and digital maps were among the least used. Librarians in EA used Web 2.0 tools mainly for communication among friends and family, keeping up-to-date and collaborating with colleagues. Furthermore, the study revealed that the librarians believed that Web 2.0 tools can be used for the purpose of informing users about library workshops and exhibitions, online reference services, marketing library services and sharing information. Lack of training, internet filtering policies and lack of access to high-speed internet were pointed to as being barriers. It is believed that by identifying these findings, university libraries in EA can take steps to highlight resources to patrons. Web 2.0 tools offer promising new outreach options for academic librarians. Many academic librarians advocate reaching students in their preferred environments to extend library services beyond traditional library walls (Miller, 2006).

It should also be noted that Web 2.0 plays a key role in facilitating information sharing and collaboration and communication between librarians and patrons and among library staff. Librarians in university libraries in EA must be proactive in their social networking attempts and should use all Web 2.0 tools, especially RSS feeds, social networking and IM for effective online reference services, sharing information, announcing workshops and exhibitions and marketing library services.

The following recommendations may help libraries plan and integrate Library 2.0 technologies in their services. Traditional teaching methods and educational approaches should be revamped to become more competitive in future LIS education. Library associations should work to develop standards and policies for managing Library 2.0 tools and its content, and organize workshops on Web 2.0 tool use by libraries. Libraries need to select tools that are user friendly and require relatively less time to set up and maintain to ensure effective management of the tools. Unfiltered websites (Appendix 2) and popular Persian-language SNSs, such as Cloob and Aparat (Appendix 3), should be used to overcome the state’s internet filtering system.

It is hoped that library managers, librarians and other people interested in libraries find the results of this research beneficial as they plan to use Web 2.0. Furthermore, researchers and information experts may also find this study useful once they begin to research the topic.

**References**

- Anderson, P. (2007), "What is Web 2.0? Ideas, technologies and implications for education", *JISC Technology and Standards Watch*, available at: [www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf](http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf) (accessed 12 May 2014).
- Baro, E., Idiodi, E. and Godfrey, V. (2012), "Awareness and use of Web 2.0 tools by librarians in university libraries in Nigeria", *OCLC*, Vol. 29 No. 3, pp. 170-188.
- Baro, E., Idiodi, E., Edewor, N. and Sunday, G. (2014), "Web 2.0 tools: a survey of awareness and use by librarians in university libraries in Africa", *The Electronic Library*, Vol. 32 No. 6, pp. 864-883.
- Birdsall, W.F. (2007), "Web 2.0 is a social movement", *Webology*, Vol. 4 No. 2, available at: [www.webology.org/2007/v4n2/a40.html](http://www.webology.org/2007/v4n2/a40.html) (accessed 18 February 2014).
- Boateng, F. and Liu, Y. (2014), "Web 2.0 applications' usage and trends in top US academic libraries", *Library Hi Tech*, Vol. 32 No. 1, pp. 120-138.
- Brevik, T. (2006), "Library2.0=My library?", available at: <http://lib1point5.wordpress.com/2006/04/12/library-20-mylibrary/> (accessed 21 April 2011).
- Brookes, M. (2010), "An evaluation of the impact of formative feedback podcasts on the student learning experience", *Journal of Hospitality, Leisure, Sport and Tourism Education*, Vol. 9 No. 1, pp. 53-64.
- Casey, M. and Savastinuk, L. (2006), "Library 2.0: service for the next-generation library", *Library Journal*, Vol. 131 No. 14, pp. 40-42.
- Chad, K. and Miller, P. (2005), "Do libraries matter? The rise of Library 2.0", available at: <http://library.nust.ac.zw/gsd/collect/toolbox/archives/HASH0190.dir/Do%20Libraries%20Matter.pdf> (accessed 5 December 2015).
- Chew, I. (2008), "Web 2.0 and library services for young adults: an introduction for librarians", available at: [www.nlcy.go.kr/symposium/2011/pdf/eng/n9.pdf](http://www.nlcy.go.kr/symposium/2011/pdf/eng/n9.pdf) (accessed 2 May 2014).
- Chua, A.Y.K. and Goh, D.H. (2010), "A study of Web 2.0 applications in library websites", *Library and Information Science Research*, Vol. 32 No. 3, pp. 203-211.
- Collins, G. and Quan-haase, A. (2013), "Social media use by Ontario University libraries: challenges and ethical considerations", *40th Annual Conference Wilfrid Laurier University/University of Waterloo, Waterloo, Ontario*, available at: [www.cais-acsi.ca](http://www.cais-acsi.ca) (accessed 26 July 2014).
- Curran, K., Murray, M. and Christian, M. (2007), "Taking the information to the public through Library 2.0", *Library Hi Tech*, Vol. 25 No. 2, pp. 288-297.
- Edda, T. (2014), "Integrating Web 2.0 into an academic library in Tanzania", *The Electronic Library*, Vol. 32 No. 2, pp. 183-202.
- Engard, N. (2006), "IL 2006: wikis for libraries", available at: [http://librarianinblack.typepad.com/librarianinblack/2006/10/il\\_2006\\_wikis\\_f.html](http://librarianinblack.typepad.com/librarianinblack/2006/10/il_2006_wikis_f.html) (accessed 10 August 2013).
- Fernandez, P. (2009), "Balancing outreach and privacy in Facebook: five guiding decision points", *Library Hi Tech News*, Vol. 26 Nos 3/4, pp. 10-12.
- Frumkin, J. (2005), "The wiki and the digital library", *OCLC Systems & Services: International Digital Library Perspectives*, Vol. 21 No. 1, pp. 18-22.
- Garoufallou, E. and Charitopoulou, V. (2011), "The use and awareness of Web 2.0 tools by Greek LIS students", *New Library World*, Vol. 112 Nos 11/12, pp. 490-498.
- Gross, J. and Leslie, L. (2008), "Twenty-three steps to learning Web 2.0 technologies in an academic library", *The Electronic Library*, Vol. 26 No. 6, pp. 790-802.

- Han, Z. and Liu, Y.Q. (2010), "Web 2.0 applications in top Chinese university libraries", *Library Hi Tech*, Vol. 28 No. 1, pp. 41-62.
- Harinarayana, N.S. and Raju, N.V. (2010), "Web 2.0 features in university library web sites", *The Electronic Library*, Vol. 28 No. 1, pp. 69-78.
- Isfandyari-Moghaddam, A. and Hosseini-Shoar, M. (2014), "Factors affecting Web 2.0 adoption: a case study", *Program: Electronic Library and Information Systems*, Vol. 48 No. 1, pp. 2-15.
- Joint, N. (2009), "The Web 2.0 challenge to libraries", *Library Review*, Vol. 58 No. 3, pp. 167-175.
- Kesselman, M. (2008), "Web 2.0 expo in New York: building online communities", *Library Hi Tech News*, Vol. 25 No. 9, pp. 5-6.
- Kim, Y.M. and Abbas, J. (2010), "Adoption of library 2.0 functionalities by academic libraries and users: a knowledge management perspective", *The Journal of Academic Librarianship*, Vol. 36 No. 3, pp. 211-218.
- King, D.L. (2007), "Library 2.0 – is it techie or not?" available at: [www.davidleeking.com/2007/08/03/library-20-is-it-techie-or-not/](http://www.davidleeking.com/2007/08/03/library-20-is-it-techie-or-not/) (accessed 9 October 2012).
- Levy, M. (2009), "Web 2.0 implications on knowledge management", *Journal of Knowledge Management*, Vol. 13 No. 1, pp. 120-134.
- Linh, N.C. (2008), "A survey of the application of Web 2.0 in Australasian university libraries", *Library Hi Tech*, Vol. 26 No. 4, pp. 630-653.
- Lwoga, E.T. (2012), "Making learning and Web 2.0 technologies work for higher learning institutions in Africa", *Campus-Wide Information Systems*, Vol. 29, pp. 90-107.
- Mahmood, K. and Richardson, J.V. Jr (2011), "Adoption of Web 2.0 in US academic libraries: a survey of ARL library websites", *Program*, Vol. 45 No. 4, pp. 365-375.
- Maness, J.M. (2006), "Library 2.0 theory: Web 2.0 and its implications for libraries", *Webology*, Vol. 3 No. 2, available at: [www.webology.org/2006/v3n2/a25.html](http://www.webology.org/2006/v3n2/a25.html) (accessed 9 October 2013).
- Mansor, Y. and Idris, S.R.A. (2010), "Perceptions, awareness and acceptance of Library 2.0 applications among librarians at the International Islamic University Malaysia", *Webology*, Vol. 7 No. 2, available at: [www.webology.org/2010/v7n2/a81.html](http://www.webology.org/2010/v7n2/a81.html) (accessed May 2013).
- Matthews, B. (2007), "Moving beyond the reference desk: being where users need us", *The Reference Librarian*, Vol. 48 No. 2, pp. 9-13.
- Miller, P. (2006), "Coming together around Library 2.0: a focus for discussion and a call to arms", *D-Lib Magazine*, Vol. 12 No. 4, available at: [www.dlib.org/dlib/april06/miller/04miller.html](http://www.dlib.org/dlib/april06/miller/04miller.html) (accessed November 2012).
- Munatsi, R. (2010), "Implementation of Library 2.0 services in African academic and research libraries: need for fundamental rethink", *Proceedings of the 19th Standing Conference of Eastern, Central, Southern African Library and Information Associations (SCECSAL) in Gaborone, Botswana*, 6-9 December, pp. 249-260.
- Neal, J.G. and Jaggars, D.E. (2010), "Web 2.0: redefining and extending the service commitment of academic library", in McKnight, S. (Ed.), *Envisioning Future Library Services: Initiatives, Ideas and Challenges*, Facet Publishing, London.
- Nguyen, L. (2008), "A survey of the application of Web 2.0 in Australasian university libraries", *Library Hi Tech*, Vol. 26 No. 4, pp. 630-653.
- O'Reilly, T. (2005), "What is Web 2.0? Design patterns and business models for the next generation of software", available at: [www.oreilly.com/Web2/archive/what-is-Web-20.html](http://www.oreilly.com/Web2/archive/what-is-Web-20.html) (accessed 27 May 2014).
- Pinto, M. and Manso, R.A. (2012), "Virtual reference services: defining the criteria and indicators to evaluate them", *The Electronic Library*, Vol. 30 No. 1, pp. 51-68.

- Qutab, S. and Mahmood, K. (2009), "Library web sites in Pakistan: an analysis of content", *Program: Electronic Library and Information Systems*, Vol. 43 No. 4, pp. 430-445.
- Redden, C.S. (2010), "Social bookmarking in academic libraries: trends and applications", *The Journal of Academic Librarianship*, Vol. 36 No. 3, pp. 219-227.
- Rehman, A.U. and Shafique, F. (2011), "Use of Web 2.0 and its implications for libraries: perceptions of information professionals in Pakistan", *Library Philosophy and Practice*, available at: [www.webpages.uidaho.edu/mbolin/rehman-shafique.pdf](http://www.webpages.uidaho.edu/mbolin/rehman-shafique.pdf) (accessed 2 May 2014).
- Rod-Welch, L. (2012), "Incorporation and visibility of reference and social networks on ARL member libraries' websites", *Reference Services Review*, Vol. 4 No. 1, pp. 138-171.
- Stephens, M. and Collins, M. (2007), "Web 2.0, Library 2.0, and the hyperlinked library", *Serials Review*, Vol. 33 No. 4, pp. 253-256.
- Stuart, D. (2010), "What are libraries doing on Twitter?", *Online*, Vol. 34 No. 1, pp. 45-47.
- Thompson, J. (2008), "Don't be afraid to explore Web 2.0", *Education Digest*, Vol. 74 No. 4, pp. 19-22.
- Tripathi, M. and Kumar, S. (2010), "Use of Web 2.0 tools in academic libraries: a reconnaissance of the international landscape", *The International Information & Library Review*, Vol. 42 No. 3, pp. 195-207.
- Virkus, S. (2008), "Use of Web 2.0 technologies in LIS education: experiences at Tallinn University, Estonia", *Program: Electronic Library and Information Systems*, Vol. 42 No. 3, pp. 262-274.
- Wood, M. (2009), "Academic library websites in South Africa", *Innovation*, Vol. 39 No. 1, pp. 43-57.
- Wyatt, A.M. and Hahn, S.E. (2011), "Copyright concerns triggered by Web 2.0", *Reference Services Review*, Vol. 39 No. 2, pp. 303-317.
- Xu, C., Ouyang, F. and Chu, H. (2009), "The academic library meets Web 2.0: applications and implications", *The Journal of Academic Librarianship*, Vol. 35 No. 4, pp. 324-331.

### Further reading

- Bierman, J. and Valentino, M.L. (2011), "Podcasting initiatives in American research libraries", *Library Hi Tech*, Vol. 29 No. 2, pp. 349-358.

## Appendix 1. Survey questionnaire

Please complete the following information about your background.

Demographic information

1. Sex: Male  Female
2. Age: under 30  30-35  36-40  over 41
3. Educational level: Diploma  BA  MA  PhD

- To what extent are you aware of the following Web 2.0 tools?

Please tick as appropriate.

N	Web 2.0 technologies	I don't know	Only heard	I know
4	Blogs			
5	Wiki			
6	Social networks			
7	RSS feeds			
8	Digital maps			
9	Podcasts			
10	Social bookmarks			
11	Instant messaging (IM)			

- Rate your use of the following Web 2.0 tools.

Note: 1 indicates no use - 5 very used

N	Web 2.0 tools	1	2	3	4	5
12	Blogs					
13	Wikis					
14	Social networks					
15	RSS feeds					
16	Instant messaging					
17	Podcasts					
18	Social bookmarking					
19	Digital maps					

- For what purpose(s) do you use Web 2.0 tools in everyday life?

(You can tick multiple suggestions.)

- Training resources
- Collaborating with colleagues
- Curiosity
- Social tagging and bookmarking
- Keeping up-to-date

(continued)

- Communication amongst friends and family
  - Fun
  - Meet new people
  - Photo and video sharing
  - Exchange information, news, and ideas about [your] personal life
  - Others...
- 
- *For what purpose(s) can you use Web 2.0 tools in academic libraries?  
(You can tick multiple suggestions.)*
  - Marketing library services
  - Offering reference services
  - Sharing information about library resources
  - Offering research tips
  - Book reviews or discussions
  - Providing information about library e-journals and e-resources databases
  - Announcements about workshops and exhibitions
  - Sharing information about hours of operation, holidays
  - Others...
- 
- *What are some of the barriers that you encounter in using Web 2.0 tools as a librarian?  
(You can tick multiple suggestions.)*
  - Internet filtering
  - Lack of access to high speed Internet
  - Lack of training
  - Unavailability of computers and Internet facilities
  - Lack of time for further study
  - Others...

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**Appendix 2**

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Name	URL
Academia.edu	academia.edu
About.me	about.me
Advogato	advogato.org
aNobii	www.anobii.com
aSmallWorld	www.asmallworld.com
Athlinks	www.athlinks.com
Busuu	www.busuu.com
CaringBridge	www.caringbridge.org
Classmates.com	www.classmates.com
delicious	delicious.com
DeviantArt	www.deviantart.com/
Dreamwidth	www.dreamwidth.org
Ello	ello.co
Elixio	www.elixio.net
English, baby!	www.englishbaby.com
Epernicus	www.epernicus.com
Experience Project	www.experienceproject.com
Exploroo	exploroo.com
Friendster	www.friendster.com
Fuelmyblog	www.fuelmyblog.com
FullCircle	www.fullcircle.com
Gather.com	gather.com
Hospitality Club	www.hospitalityclub.org
HR.com	www.hr.com
Indaba Music	www.indabamusic.com
Instagram	instagram.com
italki.com	www.italki.com
Kiwibox	www.kiwibox.com
Lafango	lafango.com
LibraryThing	www.librarything.com
Lifeknot	www.lifeknot.com
LinkedIn	www.linkedin.com
Livemocha	livemocha.com
MEEtin	www.meetin.gs
MyLife	www.mylife.com
My spaces	myspace.com
Nimbuzz	www.nimbuzz.com
PatientsLikeMe	www.patientslikeme.com
Shelfari	www.shelfari.com
ScienceStage	sciencestage.com
TermWiki	www.termwiki.com
Wattpad	www.wattpad.com
WAYN	www.wayn.com
Wepolls.com	www.wepolls.com
weRead	www.weread.org
Yammer	www.yammer.com
Yookos	www.yookos.com
Zooppa	zooppa.com

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**Table AI.**  
List of non-filtering  
SNSs in Iran

**Table AII.**  
Popular Persian-  
language SNSs

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Name	URL
Aparat	<a href="http://www.aparat.com">www.aparat.com</a>
Facenama	<a href="http://facenama.com">facenama.com</a>
Farstwitter	<a href="http://www.iraelo.com/farstwitter.ir">www.iraelo.com/farstwitter.ir</a>
Hammihan	<a href="http://www.hammihan.com">www.hammihan.com</a>
Facekoob	<a href="http://facekoob.ir">facekoob.ir</a>
Iteg	<a href="http://www.iteg.ir">www.iteg.ir</a>

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