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Trends in Application of Web 2.0 tools and Social Networking Sites in Libraries of Higher Education Institutes

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Trends in Application of Web 2.0 tools and Social Networking Sites in Libraries of Higher Education Institutes

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Abstract

An attempt was made to explore the usage of Web 2.0 applications and Social Networking Sites (SNS) for providing information services by libraries at selected higher education institutes in Europe, North and South America. The websites were surveyed through content analysis method that is used for a qualitative approach, as to find the details of the applications of Web 2.0 tools and SNS. Out of 72 library websites visited, only 61 libraries (48 libraries in Europe and 13 libraries in both North and South America) have adopted Web 2.0 tools and SNS. The present study reveals that though the implementation of Web 2.0 tools and SNS is progressing in the libraries located in developed countries, in the developing countries still the library staff members are facing issues with reference to infrastructure, Internet connectivity and the skills to be acquired to provide services using these applications.

Keywords: Web 2.0, Social Networking Sites, Academic Libraries, Information services, Europe, North America

Introduction

During the last two decades, there is a phenomenal growth of Information and Communication Technology (ICT) that has impacted tremendously on libraries. Around the world academic libraries started reaching the users with many dynamic information services through their websites. Liu (2008) says that the academic library websites are the virtual presentation to the world. The advent of Web 2.0 brought phenomenal opportunities to explore new ways to interact on the Internet and for peer collaborations (Bradley, 2007). The term "Web 2.0" was invented by Darcy DiNucci in 1999 and later popularized by Tim O'Reilly and Dale Dougherty at the O'Reilly Media Web 2.0 Conference in late 2004 (O'Reilly, 2005). According to O'Reilly, Web 2.0 is "the business revolution in the computer industry

caused by the move to the internet as a platform, and an attempt to understand the rules for success on that new platform". Among those rules, "Build applications that harness network effects to get better the more people use them" is the most important rule. As per (Storey, 2006), Web 2.0 can be well articulated as the shift from simply being a website and a search engine to a shared network space that drives, work, research, education, entertainment, and social activities, which especially more people are involved. According to Coombs (2007) "Web 2.0 is transforming the Web into 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". Hence, the present study concentrates on analyzing the noticeable patterns regarding the usage, trends, and adoption of web 2.0 tools along with Social Networking Sites (SNS) at libraries of higher education institutes. For the present study, the institutes/universities that are existing across Europe and North America, and that have signed Memorandum of Understanding (MoU) with NID, Ahmedabad have been considered as the authors are affiliated with one of the most prominent Design institutes in India, National Institute of Design (NID), Ahmedabad, and felt it is important to them to understand the latest trends in using these applications in libraries especially after the pandemic. NID has taken six decades of pioneering hard work by the academic community at the institute to develop a system of design education which lays more emphasis on learning than on mere instruction. Over a span of 60 years, the institution has made it a point to emphasize on learning and to pursue innovation led designs through the development of the mind and skills of designers (https://www.nid.edu/about/mandates).

In the current digital environment, Web 2.0 tools and SNS have become an integral part of the everyday lives of the youngsters as they allow them to share images, messages, videos remotely and help them in collaborating with their peers online simply with Internet connected on their gadgets. Based on these points the objectives emerged for this study are:

- To know about the important Web 2. 0 applications including SNS that are applied in the libraries of higher education institutes.

- To understand the purposes of these Social Networking Sites and Web 2.0 applications being used by these institutes' libraries

- To compare the usage of Web 2.0 and SNS applications in the libraries of higher education institutes

- To understand whether some innovative services are provided through Web 2.0 tools and SNS through which libraries can reach out to the users and vice versa.

Literature review

Based on the objectives, the literature was reviewed on Web 2.0 tools, integration of Web 2.0 tools and SNS for providing various services and sharing the information with the patrons in the academic libraries.

Maness (2006) suggested that recent thinking of the changing Web as "Web 2.0" will have substantial implications for libraries that will necessitate a new paradigm for librarianship. He applied the theory and definition to the practice of librarianship, providing access to the collections and user support for their access using Web 2.0 applications. Byrne (2008) opined that while Web 2.0 technologies offer a powerful route to repositioning the library's services in a more responsive, user centred mode, their implementation will be more challenging for the professionals who make them work. Jowitt (2008) surveyed staff and students at Universal College of Learning (UCOL) New Zealand to understand the usage and received benefits of podcasting and concluded that podcasting for library instruction does provide benefits and should be pursued. Linh (2008) conducted research on an overall picture of the application of Web 2.0 technologies in Australasian university libraries. The study explored that at least two-thirds of Australasian university libraries deployed one or more Web 2.0 technologies, only four Web 2.0 technologies were used for specific purposes and with some basic features. Tripathi and Kumar (2010) observed that "Web 2.0 applications such as blogs, RSS, IM, Podcast, and Vodcast are becoming very popular, whereas the use of Wikis has been very low".

Mahmood & Richardson (2011) surveyed the websites of 100-member academic libraries of the Association of Research Libraries (USA) regarding the adoption of Web 2.0 technologies and found that all libraries used various tools of Web 2.0. Blogs, microblogs, RSS, instant messaging, social networking sites, mashups, podcasts, and vodcasts were widely adopted, while wikis, photo sharing, presentation sharing, virtual worlds, customized webpage, and vertical search engines were used less. Gerolimos & Konsta (2011) performed the content analysis of library web sites by adopting a quantitative approach to examine the prominence of twelve pre-determined services. Their comparative study found that despite lesser user participation, there was a notable increase in the integration of web-based services.

 Walia & Gupta (2012) aimed to provide a scenario of Web 2.0 application by national libraries of the world. They surveyed 66 national libraries of the world which are general in nature and revealed that 42% national libraries have adopted one or more Web 2.0 technologies. RSS, Social Networking Sites and Microblog are popular application tools used by national libraries.

Dougan (2017) surveyed over 9,000 music faculty and 300 music librarians in the United States and discovered that faculty sometimes may use YouTube for teaching and research—but not always in expected ways. It was also found that faculty and librarians do not entirely share perspectives concerning the quality of YouTube's content, metadata, or copyright concerns. Boateng & Liu (2014) explored the usage and trends of Web 2.0 technologies in the top 100 US academic libraries. Their study noted some evident usage, trends, and adoption that are relevant to the way the Web 2.0 applications are perceived and used within academic libraries. Santosh (2017) found that the use of Web 2.0 technologies in libraries in India is marginal and in the initial stage. The study stressed on the need for training, technical support, and better organizational support to promote the use of Web 2.0 tools and technologies in Indian libraries. Williams (2020) addressed the adoption and non-adoption of social media and explored the implementation of Web 2.0 technologies and their uses in academic libraries and felt though web 2.0 technologies demonstrate ease of use, financial resources, infrastructure and management support are crucial determining factors in service delivery. Akwang

(2021) surveyed the librarians' perception and adoption of Web 2.0 technologies in academic libraries in Akwa Ibom State, Nigeria and found that their adoption was very low across the libraries due to high cost of technology, poor access to web tools, budget constraints, inadequate training for libraries and restrictive ICT policies.

The literature reviewed for this study reveals that application of Web 2.0 tools and Social Networking sites usage in academic libraries are ever-increasing. As the present study was conducted post pandemic, the authors were interested to understand whether the libraries tried to reach out to the users in a distinct way by adopting these technologies. Pilate et al (2020) surveyed UWLA library and Mulungushi University libraries through an online questionnaire during the pandemic and opined that library management needs to provide support to mobilize librarians into a more proactive and participating role in creating social media presence, enhance and upgrade social media literacy skills of academic librarians and design a social media strategy which would guide a smooth adoption and use of social media. Friday et al., (2020) expressed that to withstand COVID 19 and to be more effective and visible in the delivery of their instruction, libraries have adopted social media tools and Web 2.0 applications. As the pandemic disrupted the physical more of library services, Jana & Rout (2021) explored the readiness of academic libraries of 100 NIRF ranked institutes and found that academic libraries need to improve and update the web-based services to play a proactive role in pandemic and post-pandemic situations.

Methodology

A good number of studies reviewed in the literature adopted content analysis of library websites and library surveys. Content analysis can take the shape of an informal survey (Morville and Rosenfield, 2007) and hence the present study is based on content analysis that is used for a qualitative approach, as the websites were surveyed to find the details of the applications of Web 2.0 tools and SNS.

For this study, the list of the MoU institutes/universities (from Europe, North and South America) had been collected from the National Institute of Design, Ahmedabad website as mentioned under the *list of international collaborations* https://www.nid.edu/academics/international-programmes).

The institutes/universities' library websites were visited and searched to note the details. Google search was used to search within the libraries' websites and 'search box' on the websites were used to find the Web 2.0 tools and SNS.

The data was collected by means of a checklist, adopting some of the checklist questions based on the survey of the application of Web 2.0 in Australian University Web Sites (Cuong Linh, 2008) and Perceptions and usage of library instructional podcasts by staff and students in New Zealand, Universal College of Learning UCOL (Jowitt, 2008).

The checklist questions are given in the appendix 1 and the checklist was based on the various categories with an option for 'other', to identify the adoption of these technologies in libraries. It consists of questions with 'yes'=1 and 'No'=0 answers.

The data were compiled on an Excel spreadsheet and then analyzed to understand the availability and implementation of Web 2.0 tools and SNS for providing varied web-based information services.

Only the libraries that have adopted Web 2.0 tools and SNS were considered for the data analysis and interpretation.

Data Analysis and Interpretation

The authors visited the websites of all the libraries of the institutes and universities selected for the study to explore the use of web 2.0 tools and SNS between October to December 2022. It was noted that out of 72 library websites visited, only 61 libraries (48 libraries in Europe and 13 libraries in both North and South America) have adopted Web 2.0 tools and Social Networking Sites. Hence only those 61 library websites were considered for the study.

For calculating the Application Index of Web 2.0 and SNS in selected university libraries in Europe, North and South America, statistical methods were used to analyze the data based on the information gathered from the checkpoints. The checkpoints were placed on Microsoft Excel spreadsheets. Each of the checkpoints on the checklist was given a value, either a 1 or a 0. (Yes/No responses only). The total number of checkpoints were 70. These numbers were directly entered into the spreadsheet. The following algorithm was used to determine each university library's "application index."

Total "Yes" responses / Total No of check points X 100. Each university library's application index cap is 100. Application indexes indicated the level of Web 2.0 tools used in the respective library.

The application index is calculated as follows:

$$\frac{\text{Total "Yes" responses}}{\text{Total No of check points}} \times 100$$

Table 1: Distribution of the Web 2.0 and SNS tools application index

INSTITUTE NAME	Total of 'YES' Answers	Percentage of Application Index	Application Index N=70
Haute ecole des arts du Rhin (H.E.A.R.), Strasbourg, France	29	41.43 %	41
The Glasgow School of Art, Glasgow, Scotland	26	37.14 %	37
Sheridan College of Applied Arts & Design, Canada	25	35.71 %	36
Coventry University, Coventry, UK	25	35.71 %	36
Hochschule Ostwestfalen-Lippe, Lemgo, Germany	25	35.71	36
University of Plymouth, Plymouth, UK	25	35.71	36
George Brown College of Applied Arts and Technology (GBC), Ontario, Canada	24	34.29	34

Dept. of Machine Tools and Factory Management, Technische Universität, Berlin, Germany	24	34.29	34
Hochschule für Technik und Wirtschaft (HTW) Berlin University of Applied Arts, Berlin, Germany	24	34.29	34
Victoria and Albert Museum, UK	24	34.29	34
Lucerne School of Art and Design, Lucerne, Switzerland	24	34.29	34
Royal Academy of Arts (KABK), The Hague, The Netherlands	24	34.29	34
Virginia Commonwealth University, Richmond, USA	23	32.86	33
Royal College of Art & Design, London, UK	23	32.86	33
Politecnico di Milano, Milan, Italy	23	32.86	33
Polytechnic University of Marche, Italy	23	32.86	33
University of Ferrara, Ferrara, Italy	23	32.86	33
Saxion University of Applied Sciences, The Netherlands	23	32.86	33
Academy of Fine Arts, Warsaw, Poland	23	32.86	33
Polytechnic Institute of Castelo Branco, Castelo Branco, Portugal	23	32.86	33
University of the Arts, London, UK	23	32.86	33
HKU University of the Arts, Utrecht, Netherlands	23	32.86	33
University of Madeira, Funchal, Portugal	23	32.86	33
University of Applied Sciences and Arts, Dortmund, Germany	23	32.86	33

Instituto ProfesionalDuocUC of the Pontificia Universidad Católica de Chile, Santiago, Chile	22	31.43	31
Georgia Southern University, Statesboro, USA	22	31.43	31
University of Cincinnati, Cincinnati, USA	22	31.43	31
Arizona State University, USA	22	31.43	31
School of Arts, Media, Performance & Design, York University, Toronto, Canada	22	31.43	31
Ecole supérieure d'art et design / Cité du design, Saint-Etienne, France	22	31.43	31
Manchester Metropolitan University, Manchester, UK	22	31.43	31
Umeå Institute of Design, Umea University, Umea, Sweden	22	31.43	31
Muthesius University of Fine Arts and Design, Kiel, Germany	22	31.43	31
Haute ecole d'art et de design (Geneva School of Art and Design), Geneva, Switzerland	22	31.43	31
Hochschule für Gestaltung (HfG), Offenbach, Germany	22	31.43	31
Bath Spa University, UK	22	31.43	31
The Ontario College of Art & Design, Toronto, Canada	21	30.00	30
Università San Raffaele, Rome, Italy	21	30.00	30
Hof University of Applied Sciences, Hof, Germany	20	28.57	29
Rhode Island School of Design, Rhode Island, USA	18	25.71	26
Hochschule, Hannover, Germany	18	25.71	26
The Universidad Politécnica de Valencia, Valencia, Spain	17	24.29	24

University of Limerick, Limerick, Ireland	17	24.29	24
Concordia University, Montreal, Canada	15	21.43	21
Konstfack University College of Art, Craft & Design, Stockholm, Sweden	15	21.43	21
Heriot-Watt University, School of Textiles & Design, Galashiels, Scotland	15	21.43	21
University of Art & Design (UIAH) / Aalto University, Helsinki, Finland	14	20.00	20
University College for Creative Arts, Farnham, UK	14	20.00	20
University "La Sapienza", Rome, Italy	13	18.57	19
Faculty of Mechanical Engineering, Brno University of Technology, Brno, Czech Republic	13	18.57	19
Burg Giebchenstein, Halle, Germany	9	12.86	13
California Institute of the Arts (CalArts), Valencia, USA	7	10.00	10
Hochschule für Grafik und Buchkunst, Leipzig, Germany	7	10.00	10
Ecole nationale des Arts visuels de La Cambre, La Cambre, Belgium	7	10.00	10
Ecole nationale supérieure de créationindustrielle (ENSCI), Paris, France	5	7.14	7
Ecole nationale supérieure des arts décoratifs (ENSAD), Paris, France	5	7.14	7
Zurich University of Arts, Zurich, Switzerland	5	7.14	7
University of Bocconi, Milan, Italy	3	4.29	4
Pforzheim University of Applied Sciences, Pforzheim, Germany	2	2.86	3
Parsons The New School, New York, USA	1	1.43	1

Birmingham Institute of Art and Design, (BIAD), Birmingham, UK	1	1.43	1
Total		**1597**	

Table 1 indicates that adoption of Web 2.0 technology in American and Europe Institute Libraries, highest in the Haute ecole des arts du Rhin (41.43 %), followed by The Glasgow School of Art (37.14%), Sheridan College of Applied Arts & Design (35.71%), Coventry University (35.71%), Hochschule Ostwestfalen-Lippe (35.71%), University of Plymouth, Plymouth (35.71%), George Brown College of Applied Arts and Technology (GBC)(34.29%), Dept. of Machine Tools & Factory Management, TechnischeUniversitat (34.29), Hochschule für Technik und Wirtschaft Berlin University of Applied Arts (34.29%), Victoria and Albert Museum (34.29%), Lucerne School of Art and Design, Lucerne, Switzerland (34.29%), Royal Academy of Arts (34.29%), Virginia Commonwealth University, Richmond (32.86%), Royal College of Art & Design (32.86%), Politecnico di Milano, Milan (32.86%), Polytechnic University of Marche (32.86%), University of Ferrara, Ferrara, Italy (32.86%), Saxion University of Applied Sciences (32.86%), Academy of Fine Arts, Warsaw (32.86%), Polytechnic Institute of Castelo Branco, Castelo Branco (32.86%), University of the Arts (32.86%), HKU University of the Arts, Utrecht (32.86%), University of Madeira (32.86%), University of Applied Sciences and Arts (32.86%), Instituto ProfesionalDuocUC of the Pontificia Universidad Catolica de Chile (31.43%), Georgia Southern University (31.43%), University of Cincinnati, Cincinnati (31.43%), Arizona State University (31.43%), School of Arts, Media, Performance & Design, York University (31.43%), Ecole superieure d'art et design / Cite du design, Saint-Etienne (31.43%), Manchester Metropolitan University, Manchester (31.43%), Umea Institute of Design, Umea University (31.43%), Muthesius University of Fine Arts and Design, (31.43%), Haute école d'art et de design (Geneva School of Art and Design) (31.43%), Hochschule für Gestaltung (HfG), (31.43%), Bath Spa University, (31.43%), The Ontario College of Art & Design, Toronto,(30%), Universita San Raffaele, Rome, (30%), Hof University of Applied Sciences, Hof, (28.57%), Rhode Island School of Design, Rhode Island, (25.71%), Hochschule, Hannover (25.71%),

The Universidad Politecnica de Valencia (24.29%), University of Limerick, Limerick (24.29%), Concordia University (21.43%), Konstfack University College of Art, Craft & Design (21.43%), Heriot-Watt University, School of Textiles & Design, Galashiels (21.43%), University of Art & Design (UIAH) / Aalto University (20%), University College for Creative Arts (20%), University "La Sapienza" (18.57%), Faculty of Mechanical Engineering, Brno University of Technology (18.57%), Burg Giebchenstein, (12.86%), California Institute of the Arts (CalArts) (10%), Hochschule für Grafik und Buchkunst (10%), Ecole nationale des Arts visuels de La Cambre, La Cambre (10%), Ecole nationale supérieure de creation industrielle (ENSCI) (7.14%), École nationale supérieure des arts décoratifs (ENSAD) (7.14%), Zurich University of Arts (7.14%), University of Bocconi, Milan (4.29%), Pforzheim University of Applied Sciences (2.86%), Parsons The New School (1.43%), Birmingham Institute of Art and Design, (BIAD) (1.43%), The application index for the below mentioned 11 institutes is 0, and none of these institutes have websites. CENTRO, DanmarksDesignskole, Instituto Europeo di Design, Domus Academy, École Supérieure d'Art et de Design, I-Style, Poli.Design, Consorzio del Politecnico di Milano, École Nationale Supérieure d'Art de Dijon, Willem de Kooning Academy, Business Academy South West.

The following formula is used to compute the mean of Web 2.0 and SNS application indexes:

Mean application Index = Total of application indexes / Number of University Libraries

Mean = 1597 / 61 = 26.18

As a result, the average (mean) of the Web 2.0 and SNS application index is 26.18 points. The Haute école des arts du Rhin (Strasbourg, France) had the highest application index with 41.43 points, according to Table 1, total 30 universities/institute libraries out of 61 from Europe are equal or above to the mean index point and total 9 universities/institute libraries out of 13 from North and South America are equal or above to the mean index point.
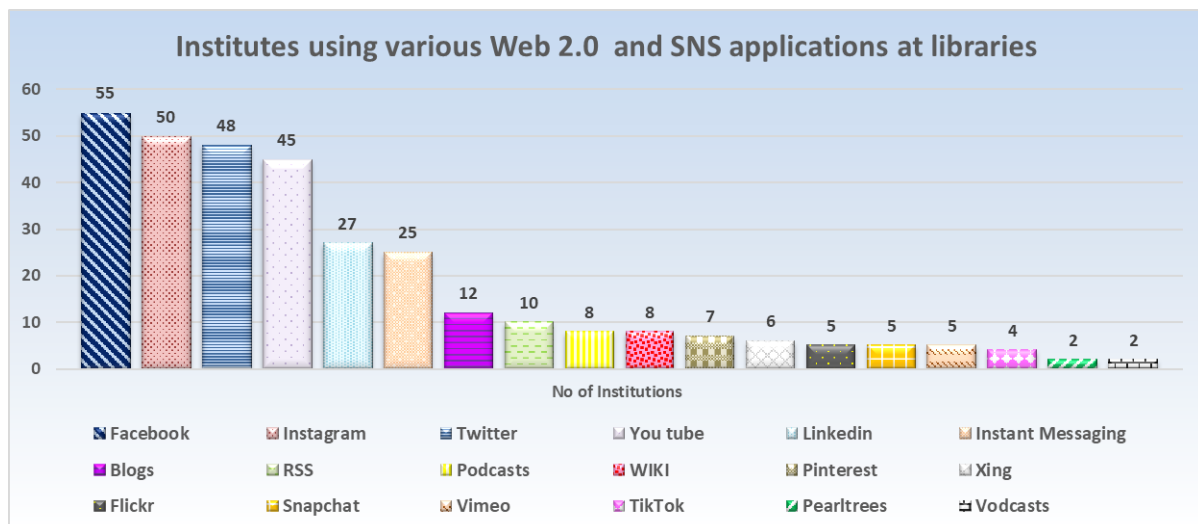
Figure 1. Institutes using various Web 2.0 and SNS applications at libraries

As per the collected data and mentioned in Figure 1, it was noted that SNS, specifically Facebook is the most popular and in use at 55 libraries, while Instagram took the second position is in use at 50 libraries then Twitter with its presence at 48 libraries, and YouTube at 45 institute libraries. And, then LinkedIn (27), instant messaging (25), blogs (12), RSS (10), podcasts (8), WIKI (8), Pinterest (7), Xing (6), Flickr (5), Snapchat (5), Vimeo (5), TikTok (4), Pearltrees (2) and, Vodcasts (2). Using these tools, mostly the libraries are providing video courses and tutorials focussing on library use, library catalog, request for interlibrary loan, reservation of a group study room, databases, and other services.
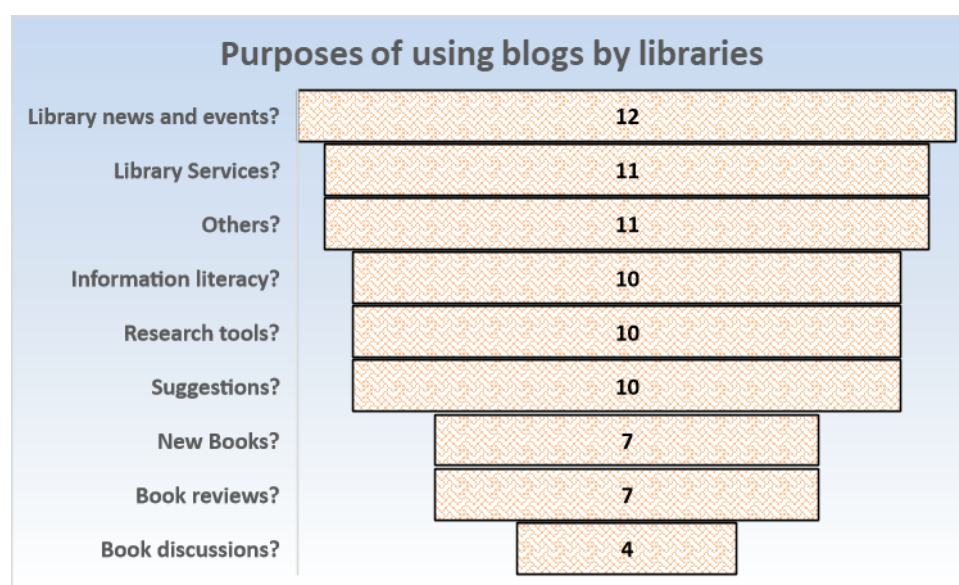

Figure 2. Purposes of using blogs by libraries

According to the data in Figure 2, there are 12 library blogs containing news and events. It was observed 11 of them are offering library services and used for other activities. Ten libraries foster information literacy, support researchers by publishing information about use of research tools and collecting user suggestions or feedback. Seven libraries display new books, and host discussions about the books' contents, while four of these libraries categorize the various user reviews. Other activities involve curriculum-linked learning programs and resources that foster participation, originality, and intellectual development. Users can learn more about the library's collection through stories and displays of rare books with images and abstracts.
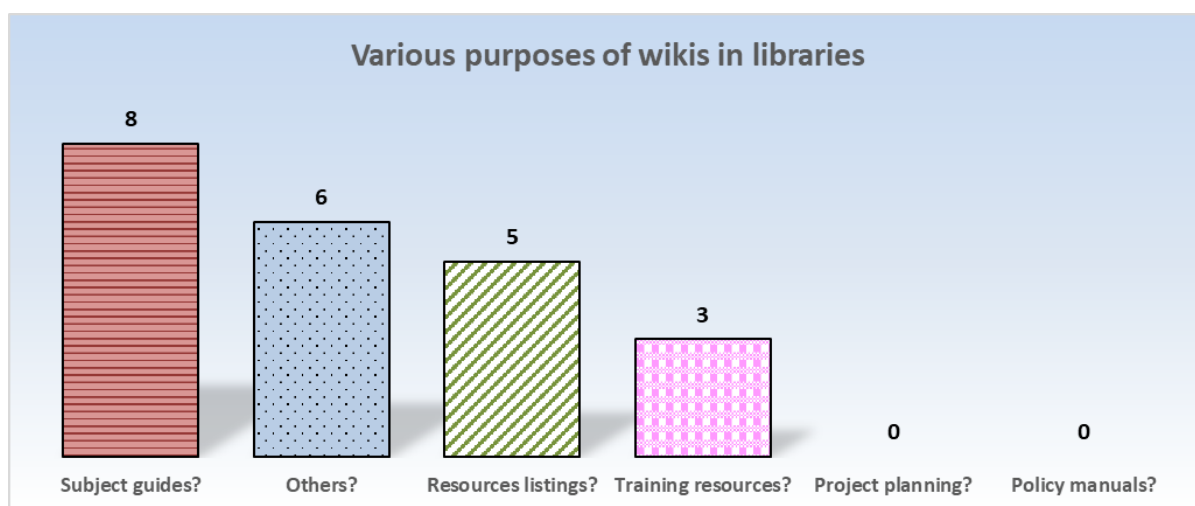

Figure 3. Various purposes of wikis in libraries

According to the data represented in Figure 3, eight libraries are linking subject guides to the Wiki pages. Six libraries are providing other services such as database searches, library success stories, tips to use OPAC, and some efforts to strengthen the library community by the publication of newsletters and information about presentations. Three libraries are fostering on training of the resources that are present in the library collection, while five libraries are listing the resources. It was discovered that none of the libraries are using their Wiki sites to display project planning and policy guidelines.
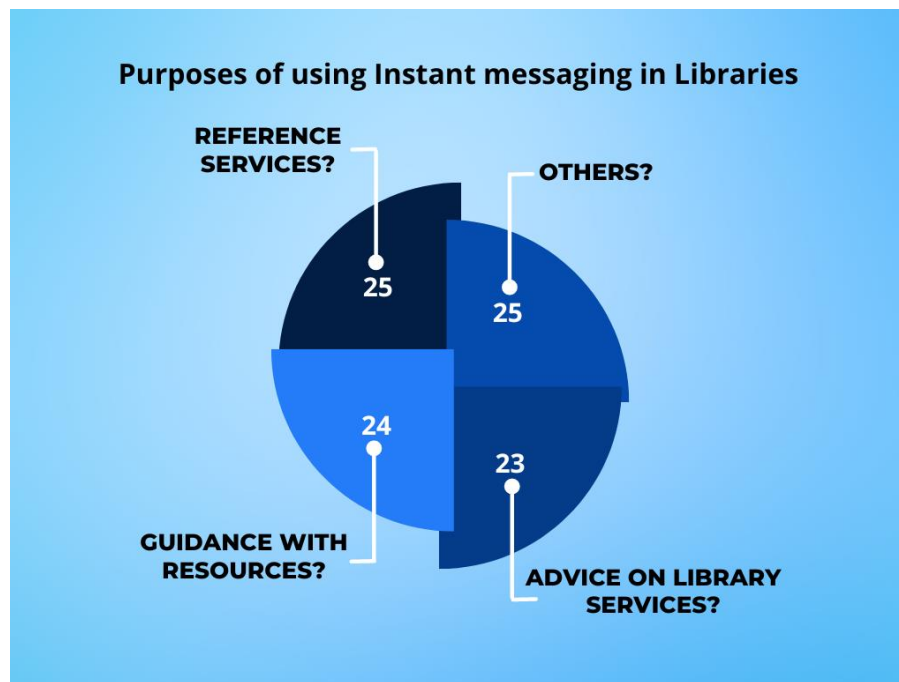
Figure 4. Purposes of using IM in libraries

According to data collected from library websites, Figure 4 clearly indicates that 25 libraries provide reference services through instant messaging, 24 libraries provide guidance with resource support, and 23 libraries provide advocacy about library services and 25 libraries offer recommendations for other libraries' services like video chat feature and systematic chat via option to interact directly with users and respond to their questions.
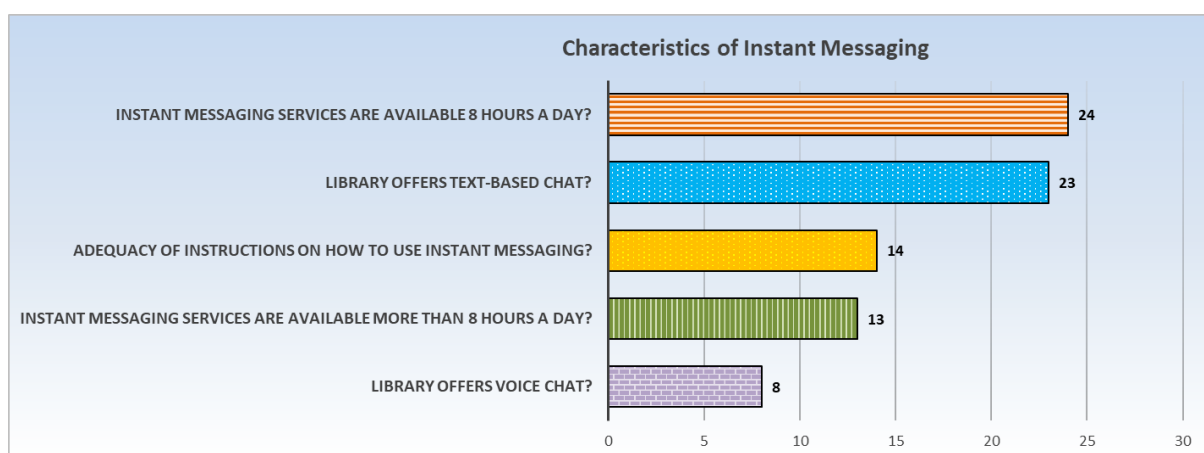

Figure 5. Characteristics of IM

While studying the characteristics of Instant Messaging, the data shown in figure 5 reveals that 24 libraries have instant messaging services that are accessible eight hours a day, and 13 have services

that are accessible more than eight hours a day. It was noted that 23 libraries are providing text chat options and eight of them are also providing voice chat options. 14 libraries are providing adequate instructions about using instant messaging.
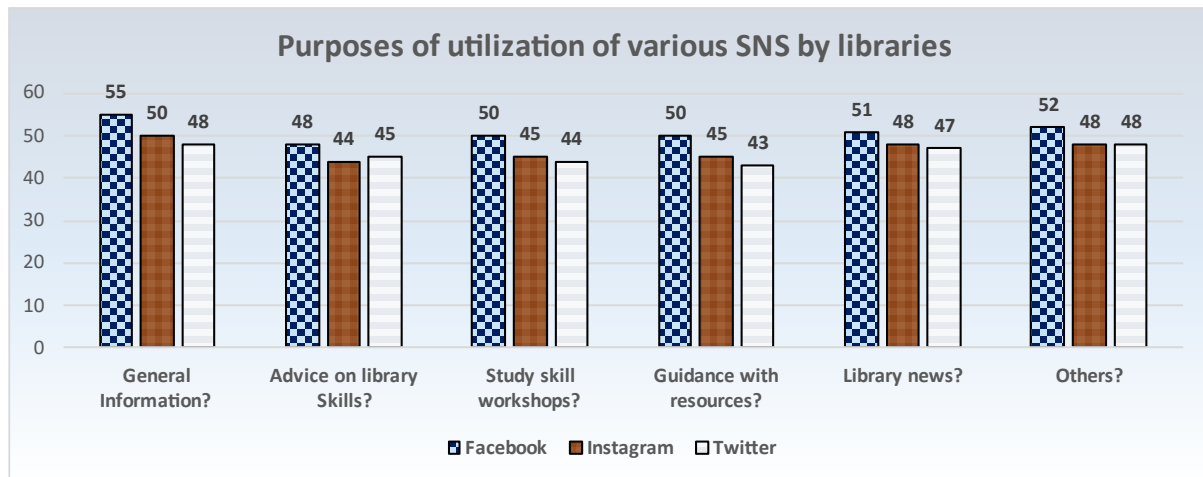

Figure 6. Purposes of utilization of various SNS by libraries

According to the data in Figure 6, there are 55 libraries using Facebook for general information followed by the usage of Instagram at 50 and Twitter at 48 libraries. 48 libraries are using Facebook for giving advice on library skills to users followed by Instagram at 44 and Twitter at 45 libraries. 50 libraries are using Facebook for conducting study skill workshops followed by Instagram at 45 and Twitter at 44 libraries. 50 libraries are using Facebook to provide guidance with resources for users followed by Instagram at 45 and Twitter at 43 libraries. 51 libraries are using Facebook to publish library news followed by Instagram at 48 and Twitter at 47 libraries. 52 libraries are using Facebook for other purposes and followed by Instagram and Twitter at 48 libraries. Based on the analyzed data, Facebook, Instagram, and Twitter stand in first three positions as the most utilized SNS. The other purposes include Facebook pages giving information on their publications and student dream project accounts. Instagram is filled with videos of professor talks, student projects, and local weather information for the area where the library is located. Link for Library setup photos of campus life, book fairs, showcases of students' best work, and video lectures on various topics. And other services like our SWAP SHOP, and digital mental health assistance, a location where UAL personnel and students

can freely exchange materials to cut down on waste or students may use or exchange the instruments, books, paper, materials made of plastic, and other items etc.

Limitations/implications

This study is completely based on the publicly available data collected from the websites of the respective libraries or institutes/universities regarding the usage of Web 2.0 and SNS. Web 2.0 tools used on the library intranet were not analyzed for this study.

Conclusion

The pandemic was a real eye opener that made us understand that the disruption is important (though not welcomed) in building and crafting agility within us which will help us rebound and meet up with challenges in work or life. Disruption may be possible in terms of digital– ubiquity, digital divide, processes, natural disruptions, pandemic in particular, Knowledge base vis a vis organizational change etc. It is important to develop a strategic plan on using various technologies like Web 2.0, SNS or any other tools so that certain essential information can be disseminated to the users even during unforeseen circumstances. The information needs and requirements may change with reference to the discipline or subject domains taught at the institutes and hence libraries should not build any services by following the rule "one size fits all" (Bomhold, 2014). A proper analysis of the Web 2.0 and SNS applications are to be analysed before implementing them at the respective libraries. After analyzing and interpreting the data on usage of Web 2.0 technologies and SNS at various higher educational institutions/universities, the present study reveals that though the implementation of Web 2.0 tools and SNS is progressing in the libraries located in developed countries, in the developing countries still the library staff members are facing issues with reference to infrastructure, Internet connectivity and the skills to be acquired to provide services using these applications.

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Appendix 1

Acronyms and Definitions of SNS and Web 2.0

RSS	Really Simple Syndication (RSS) feed is a set of instructions residing on the computer server of a website, which is given upon request to a subscriber's RSS reader, or aggregator. The feed tells the reader when new material—such as a news article, a blog posting, or an audio or a video clip—has been published on the website
Blog	A blog (a shortened version of "weblog") is an online journal or informational website displaying information in reverse chronological order, with the latest posts appearing first, at the top. It is a platform where a writer or a group of writers share their views on an individual subject.
WIKI	It is collaborative site created by a community of users, where the users can add, edit or remove contents
Podcasts	It is a type of digital media, usually audio, that is available in a series of episodes or parts and is streamed or downloaded by the end user over the
Vodcasts	A step beyond podcasting, vodcasting, also called video podcasting or vlogging, adds video to the downloadable sound files podcast listeners are used to. Downloading the video files is a simple matter of subscribing to a vodcast in one of the many freely available directory programs.
Twitter	Twitter is a free social messaging tool that allows users to stay connected through short text messages of up to 140 characters in length
Facebook	It is a social networking website where users can post comments, share photographs, and post links to news or other interesting content on the web, chat live, and watch short-form video
Instagram	It is a free, online photo-sharing application and social network platform that was acquired by Facebook in 2012

Flickr	Flickr is an American image hosting and video hosting service, as well as an online community, founded in Canada and headquartered in the United States.
YouTube	YouTube is a free video-hosting website that allows members to store and serve video content.
Instant Messaging	IM is messages through a standalone application or embedded software. IM sessions usually take place between two users in a private, back-and-forth style of communication.
LinkedIn	A social networking website designed for business professionals. It allows you to share work-related information with others.
Pinterest	A social media website that allows users to organize and share images and videos from around the Web.
Xing	A web-based platform which offers people a **social** infrastructure to administer their business and private contacts
TikTok	A short-form, video-sharing app that allows users to create and share 15-second videos, on any topic
Snapchat	A mobile app that allows users to send and receive ephemeral photos and videos, which disappear shortly after they have been posted
Pearltrees	Pearltrees is a free, visual, and collaborative library that lets you organize web pages, files, photos and notes to retrieve and share them anywhere easily. Leverage Pearltrees' community to discover amazing stuff related to your interests and enrich your account. Retrieve anything you keep in Pearltrees from your computer, mobile and tablet.
Vimeo	A video hosting, sharing, and services platform that focuses on the delivery of high-definition video across a range of devices. Vimeo's business model is through software as a service.

Appendix 2: Web 2.0 Tools and Social Networking Sites that are in use at various universities

Does the library use Blogs?	Book discussions?
General Information?	Information literacy?
Library news and events?	Research tools?
Library Services?	Suggestions?
New Books?	Does the library use Wikis?
Book reviews?	Subject guides?

Project planning?	Study skill workshops?
Policy manuals?	Using research tools?
Resources listings?	Guidance with resources?
Training resources?	Library news?
Others?	Book reviews?
Does the library use RSS?	Others?
Does the library use Instant Messaging?	Does the library use Vodcasts?
Reference services?	Does the library use Facebook
Advice on library services?	General Information?
Guidance with resources?	Advice on library Skills?
Others?	Study skill workshops?
Adequacy of instructions on how to use Instant Messaging?	Guidance with resources?
Library offers text-based chat?	Library news?
Library offers voice chat?	Others?
Instant Messaging services are available 8 hours a day?	Does the library use Instagram
Instant Messaging services are available more than 8 hours a day?	General Information?
	Advice on library Skills?
Does the library use Podcasts?	Study skill workshops?
Library orientation tours?	Guidance with resources?
General searching skills?	Library news?
Searching the library catalogue?	Others?
General Information?	Does the library use Twitter
Advice on library Skills?	General Information?
	Advice on library Skills?
	Study skill workshops?

Guidance with resources?	
Library news?	
Others?	
Does the library use YouTube	
LinkedIn	
Flickr	

Snapchat	
Vimeo	
Pinterest	
Xing	
TikTok	