

# The SWOT Analysis of Using Web 2.0 Technology in Some Selected Private University Libraries of Bangladesh



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## Submitted By:

Examination Roll: 4737

Registration: H-3329

Examination Session: 2010-2011

Department of Information Science and Library Management

University of Dhaka, Dhaka-1000, Bangladesh

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## Declaration

I certify that this thesis entitled ***“The SWOT Analysis of Using Web 2.0 Technology in Some Selected Private University Libraries of Bangladesh”*** is entirely my own work and has not been taken from the work of others save. I believe, it contains such materials which are not ever published and written by any other person.

Examination Roll: 4737

Dated: August 20, 2013

*Dedicated to My Beloved Parents*

## **Acknowledgement**

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## Abstract

This study identifies which libraries of Bangladesh use Web 2.0 technology and that don't as well as also reveals that what kind of Web 2.0 technologies have been adopted in these libraries. The aim of the study was to explore the strengths, weaknesses, opportunities and threats of using Web 2.0 technologies in the private university libraries of Bangladesh. To accomplish the purposes, an interview method was employed with the help of a structured questionnaire, consisted of 100 (One-hundred) interviewees who were skilled to use Web 2.0 technologies. Out of them (100), Library and Information Science (LIS) professionals were 35 (Thirty-five), Academics were 15 (Fifteen), and Students were 50 (Fifty). Data has been analyzed using the combination of quantitative and descriptive analysis. The results indicate that most of the LIS professionals have been using social networking tool, E-mail group, and Blogs & Wikis, while Video sharing tool, Image sharing tool, RSS Feed, Book Review, Social Bookmarking, and Instant Messenger are less beneficial. Majority of them felt that Social Networking Tool, User Comment, Email Group, RSS Feed, Blogs & Wikis, Book Review, and Instant Messenger were very useful for the library services, whereas Video Sharing Tool, Social Bookmark, and Image Sharing Tool were less beneficial for the library services. Results on academics' and students' perceptions reveal that they use social networking tool, E-mail Group, Blogs & Wikis widely, while Video Sharing Tool, Image Sharing Tool, Instant Messenger, User Comment, Book Review, and RSS Feed are less used. The study also reveals that the majority of the academics and students use Web 2.0 tools to work, study and for social purposes. Very few of them use Web 2.0 tools only for social/fun.

Based on the perceptions of LIS professionals as well as academics and students, the results of this study were demonstrated using a SWOT analysis. It has been found that the main strength of the Web 2.0 technology is the ability to meet the requirements of the clients, and allows them to stay updated on library news. Accordingly, the weakness of the Web 2.0 diminishes face-to-face socialization among individuals. One of the greatest opportunities of the Web 2.0 technology is the ability not only to use social/fun but also to perform professional work and study in libraries of Bangladesh. Lastly, the threat of Web 2.0 is that sometimes it becomes out of control for the librarians. As the possibility of hindrance is low to use the website of library, anybody can post irrelevant information through Web 2.0.

**Keywords:** Web 2.0, LIS professionals, academics, students, university libraries, Bangladesh.

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## List of Acronyms

<u>Acronyms</u>	<u>Elaborations</u>
AAL	Ayesha Abed Library
DIUL	Daffodil International University Library
EWUL	East-West University Library
IM	Instant Messenger
IUBL	Independent University, Bangladesh, Library
LIS	Library and Information Science
NSUL	North South University Library
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities, and Threats



# Chapter-1

## Introduction

### 1.1 Prelude

The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location<sup>1</sup>. The history of Internet starts from ARPANET (Advanced Research Projects Agency NET work), very first shape of Internet that was developed by DARPA (Defense Advanced Research Projects Agency) (Ata-ur-Rehman and Shafique, 2011). The use of Internet was organizational and educational until 1992 and afterwards it was not being bound in pacing only to this arena but also started spreading out in network communication and the use of network communication gradually created a huge waking in people.

In the beginning, static web pages were being created for one way of communication and these pages were read-only for visitors. Hyper Text Markup Language (HTML) was being used widely for web-publishing. The initial form of web was named Web 1.0 later (Ata-ur-Rehman and Shafique, 2011). The concept of “Web 2.0” began with a conference brainstorming session between O’Reilly and MediaLive International, Dale Dougherty, web pioneer. Introducing the term Web 2.0 technology in 2004 by Tim O’Reilly. Boateng, Mbarika and Thomas (2010) define, Web 2.0 as a set of trends and tools for using the Internet. They further explain that these socio-technological innovations have enabled interactivity and gathering of knowledge through experience and practice on a global scale. The concept of collaborative work, social networking and the ease in the usage of these applications has brought a significant change in the Internet usage style of Internet surfers in the world.

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<sup>1</sup> <http://www.internetsociety.org/internet/what-internet/history->

This introductory chapter provides background information for this study. The statement of the research problems, research aims and objectives, research questions and methodology have also been discussed in this chapter. The definition of the terminologies used in the thesis is also conversed. The chapter concludes with a brief summary of the whole chapters providing an overall structure of the thesis.

## **1.2 Background**

There is “still a huge amount of disagreement about just what Web 2.0 means, with some people decrying it as a meaningless marketing buzzword, and others accepting it as the new conventional wisdom” (O’Reilly, 2005). Davis (2005) describes Web 2.0 as an attitude not a technology. Tim O’Reilly refers that Web 2.0 as second generation of the worldwide web, describing a series of technologies based on seven underlying principles, i.e. “the Web as platform, harnessing collective intelligence, data is the next Intel inside, end of the software release cycle, lightweight programming models, software above the level of single device, and rich user experiences” (O’Reilly, 2005). King (2007) views is that Browser and Web 2.0 applications and connectivity ¼ Full featured OPAC, Library users should be able to craft and modify library provided services, [Librarians should] continue to examine and improve services and be willing to replace them at any time with newer and better services. Such technologies have just created a new wave of technological applications in libraries, and also attracted the attention of researchers, scholars and the library community (Linh, 2008).

O’Reilly (2005) cites a number of examples of how Web 2.0 can be distinguished from Web 1.0, such as Web 1.0 is mainly a platform for information, but Web 2.0 is also a platform for participation. One of the most significant differences between Web 2.0 and the traditional World Wide Web (retroactively referred to as Web 1.0) is greater collaboration among Internet users and other users, content providers, and enterprises. According to Ian Davis, “Web 1.0 took people to information; Web 2.0 will take information to the people”.

However, many authors refer to the Britannica Online as a typical example of Web 1.0, and to the Wikipedia as a typical example of Web 2.0. Thus, Web 1.0 is characterized as “read only Web” and Web 2.0 as “read-write Web” which “enables the users to add, share, rate or adjust information” (Drachsler, Hummel and Koper, 2008). Some of the typical features of Web 1.0 are: static and non-interactive web pages; content management systems; portal, directories (taxonomy), Britannica online, Personal Websites and MP3 (pre-iPod). Web 2.0 is about E-mail groups, Instant Messenger, blogs, wikis, RSS (Really Simple Syndication) and social networking tools, social bookmarks, book review and user comments.

### **1.3 Statement of the Problems**

Web 2.0 tools are bringing potential services, which libraries and librarians can utilize to their advantages (Khiwa, 2010). A growing number of academic libraries are starting to adopt and implement these tools for their services (Daihani, 2009), while the library community has started to use these tools. But, there is very little number of literatures that investigates the usage, experiences and impact of these tools on academic librarians (Chawner, 2008; Daihani, 2009; Rutherford, 2008; Khiwa, 2010). The present study generates the following three problems:

**First problem:** Although, few private university libraries in Bangladesh have adopted one or more Web 2.0 technologies and added these technologies in their library websites, but there is no research investigating the extent and purpose of the adoption of such technologies.

**Second one:** The meaning and perceptions of Web 2.0 technologies are still unclear to many Library and Information Science (LIS) professionals as well as academics and students.

**Third problem:** There is a several lack of studies about the perceptions of LIS professionals as well as perceptions of academics and students with view to Web 2.0 concepts, usage and applications in libraries.

## **1.4 Aims and Objectives of the Study**

The aim of the study is to explore the strengths, weaknesses, opportunities and threats of using Web 2.0 technologies in the private university libraries of Bangladesh. The more specific objectives are to:

- identify the use of Web 2.0 technologies by the LIS professionals and faculty members as well as students and their perceptions about the potential usage of these technologies in the libraries of Bangladesh.
- explore Web 2.0 technologies that are applied in the libraries of Bangladesh.
- find out the purposes of Web 2.0, used in the libraries.

## **1.5 Research Questions**

To achieve the above objectives, this study has formulated one major research question (MRQ) and three subsidiary research questions (SRQs):

**MRQ:** What are the strengths, weaknesses, opportunities and threats of using Web 2.0 technologies in the private university libraries of Bangladesh?

**SRQ1:** What type of Web 2.0 technologies have Bangladeshi private university libraries adopted as revealed on their websites?

**SRQ2:** For what reasons are academics and students using Web 2.0 technologies in libraries?

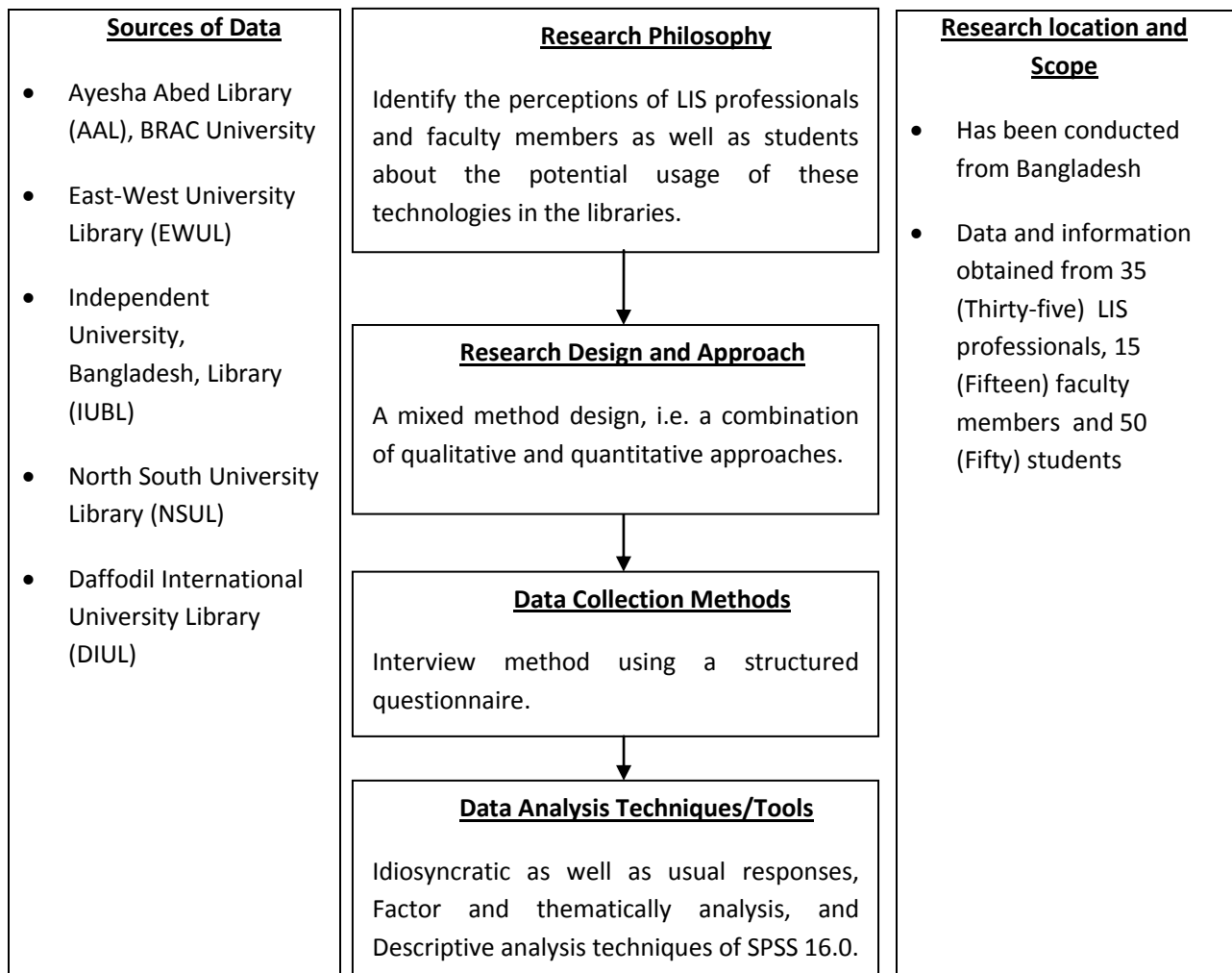
**SRQ3:** How do LIS professionals as well as academics and students perceive the use of Web 2.0 tools for library services?

## 1.6 Research Design and Methodology

The interview method was used for the collection of data with the help of a structured questionnaire, consisted of 100 (One-hundred) interviewees who were skilled to use Web 2.0 technologies (**See figure 1.1**). Out of them (100), LIS professionals were 35 (Thirty-five), Academics were 15 (Fifteen) and Students were 50 (Fifty). “A structured questionnaire is one in which the questions are asked precisely decided in advance. When used as an interviewing method, the questions are asked exactly as they are written, in the same sequence, using the same style, for all interviews. Nonetheless, the structured questionnaire can sometimes be left a bit open for the interviewer to amend to suit a specific context<sup>2</sup>”. In fact, two parts belonged to the research, the first part was- “Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Library and Information Science (LIS) Professionals” which consisted of 26 questions, and the second part was-“Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Academics (i.e. faculty members) and Students” which consisted of 19 questions, both closed and open, which were also divided into four sections. Initially, a pilot interview was conducted by four LIS professionals who had practical knowledge and experiences with Web 2.0 technologies and some nominal changes of the questionnaire were made in order to ensure valid understanding of the questions. The structured questionnaire was prepared and then interview to those LIS professionals, faculty members and students who were using Web 2.0 technology in their libraries.

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<sup>2</sup> [http://www.archives.who.int/PRDUC2004/RDUCD/INRUD\\_2000.../qm\\_ch6.doc](http://www.archives.who.int/PRDUC2004/RDUCD/INRUD_2000.../qm_ch6.doc)



**Figure 1.1: The research methodology used in this research**

## **1.7 Definition of the Terminologies Used in the Thesis**

### ***1.7.1 SWOT Analysis***

SWOT analysis is a structured planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business venture. A SWOT analysis can be carried out for a product, place, industry or person<sup>3</sup>. A SWOT analysis helps to identify the positives and negatives inside and outside of Web 2.0 technologies.

### ***1.7.2 E-mail Group***

Electronic mail or E-mail Group is the most popular Web 2.0 technology. It is a method of sending messages from one computer to another. A library can share library news, events, images or any other document to clients through Email Groups. The main purpose of E-mail group is to communicate a group of people at once. There is no limit on how short or how long the message should be. It can attach large documents and other files with a click of a button.

### ***1.7.3 Instant Messenger***

Instant messaging (IM) is an integral tool for reference services in terms of chat services. It can improve the timelines of user interaction and the user's initiative, help libraries investigate user's requirement clearly and concisely in time, which is helpful to answer the questions (Si, Shi and Chen, 2011). Maness (2006) claims that Instant Messaging was initially Web1.0 application because it often requires the downloading of software but now a day IM can be categorized in Web 2.0 applications because IM is available through browsers from most of service providers (AOL, MSN, Zoho Chat, Google Talk, etc.). A study of top 100 university libraries shows that IM features have been used extensively in libraries to provide quick online reference services using IM technology (Harinarayana, 2010).

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<sup>3</sup> [http://en.wikipedia.org/wiki/SWOT\\_analysis](http://en.wikipedia.org/wiki/SWOT_analysis)

#### **1.7.4 Blogs & Wikis**

A weblog, or blog, is just an online diary where entries are displayed in reverse chronological order and in addition to text messages; postings can include photos, links, video and audio. Tools, like Blogger and WordPress, make the creation of blogs very easy (Downes, 2005; Farkas, 2007). In simple terms, blog is a piece of software which allows users to write an online diary on a website. Blogs can be used for sharing knowledge. Journaling an experience to be shared with learners is a standard use of a blog. Project teams may use a blog to communicate news and developments. Blogs can be published by individuals, by teams or communities. Hane (2001) says that blogs are a natural for librarians. Most of the time, blogs are created as single-person effort but some blogs are created and published as cooperative or group projects (Clyde, 2004).

A library wiki as a service can enable social interaction among librarians and patrons, essentially moving the study group room online. Wikis are the mix of many other technologies like messaging, blogging, streaming media and tagging (Maness, 2006). A wiki is a server program that allows users to collaborate in forming the content of a website. With a wiki, any user can edit the site content, including other users' contributions, using a regular web browser. Basically, a wiki web site operates on a principle of collaborative trust.

#### **1.7.5 Image Sharing Tool**

Online image sharing application is being used to share images within communities and is a very good source of sharing different events with the help of images and image sets. These tags are very useful for retrieving relevant images (Angus, Thelwall and Stuart, 2008; Ata-ur-Rehman and Shafique, 2011). It allows users to upload, share and tag images by keywords.



### ***1.7.6 Video Sharing Tool***

Video sharing tools let the user to upload, tag, watch, rate, review, and even create playlists to customize your collection (Macaskill and Owen, 2006). This is a very attractive technology of Web 2.0 era in libraries. It raises the library's visibility and communicates with others.

Some examples include: YouTube <http://www.youtube.com/> and Metacafe <http://www.metacafe.com/>.

### ***1.7.7 Social Networking Tool***

The utilization of social networking services (SNS) is mainly for publicizing library events, accessing library resources, providing reference services, and sharing photos (Han and Liu, 2010). Social networking sites, such as Facebook and MySpace, with hundreds of millions of users which allow subscribers to create web spaces where they can share their thoughts, music, videos and pictures (Virkus, 2008). The library's Facebook profile is commonly used to promote new materials, inform users of events and hours, and reach users and prospective users in this online social environment (Currie, 2010). The great invention of social networking tools is that it helps to create friendship among different libraries.

### ***1.7.8 Social Bookmark***

Non-student and student staff can benefit from a shared repository of bookmarks when lists of them are accessible in a Web 2.0-based social bookmarking tool such as Delicious. Here, too, folksonomies are used (Currie, 2010). Favorite bookmarks can be described, tagged, collaboratively shared, and searched for by others (Maness, 2006). The social bookmarking service permits clients to store their bookmarks online. Throughout the tool, clients can be greatly benefited.

### ***1.7.9 RSS Feed***

Whether using a blog, online calendar, wiki, or a combination of the three, another Web 2.0 technology that will assist staff members in staying current is establishing a RSS (Rich Site Summary or, alternatively, Real Simple Syndication) feed to accompany each tool (Currie, 2010). It creates a feed from a site that readers can then add into an aggregator to create one point of access for many sources (Davison-Turley, 2005). RSS provides an alert to a new blog post, calendar revision, or wiki update within another technology; via a RSS feed reader that the staff member may access at a computer or with a mobile device, or through an e-mail alert (Currie, 2010). The great advantage of using RSS technology in library is that if users take any library materials without get issued, it provides an alert instantly.

### ***1.7.10 Book Review***

A book review is a description, critical analysis, and an evaluation on the quality, meaning, and significance of a book, not a retelling. A review can be as short as 50-100 words, or as long as 1500 words, depending on the purpose of the review<sup>4</sup>. It provides essential information about the book: title, author, first copyright date, type of book, general subject matter, special features (maps, color plates, etc.), price and ISBN which helps user to locate the documents, books, journals easily. It's a good way to evaluate the strengths, weaknesses, opportunities and threats of the material.

### ***1.7.11 User Comment***

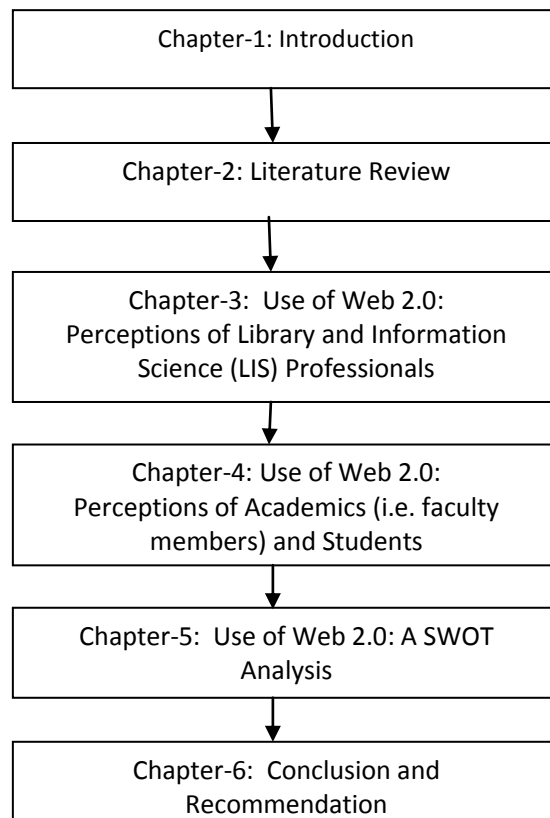
Library receives feedback regarding the library, their services and resources. Responses, comments and suggestions of users are posted in the specific page of the library website. If there is any question rises on users mind, they can inform the library authority and the authority try their level best to serve them.

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<sup>4</sup> <http://www.lavc.edu/library/bookreview.htm>

## 1.8 Structure of the Thesis

This thesis is organized into six chapters as shown in **figure 1.2**. This introductory chapter provides the research background, statement of the problems, research aims and objectives, research questions, research design and methodology, as well as overview of the thesis. The following chapters are structured as follows:



**Figure 1.2: Structure of the thesis**

**Chapter 2:** provides an extensive review of the literature covering the following streams: concept of Web 2.0, features of Web 2.0, usage and application of Web 2.0, as well as its impact on academic libraries.

**Chapter 3:** explores the perceptions of LIS professionals who were using Web 2.0 technologies regarding their concept of it, advantages and disadvantages of using Web 2.0, usage of Web 2.0, views of the participants about the adoption of it in their libraries, the types of problems they face in using it in their libraries and recommendations to overcome the constraints of it in libraries, as well as their comments or observations regarding the use of Web 2.0 technologies in libraries of Bangladesh.

**Chapter 4:** analyzes the data obtained from the interviews of faculty members and students for an exhaustively understanding the concept of Web 2.0 tools, purposes of their using it in libraries, the types of problems they face in using it in their libraries and suggestions to overcome the problems of it in libraries, as well as their comments or observations regarding the use of Web 2.0 technologies in libraries of Bangladesh.

**Chapter 5:** explains the data collection and analysis, describes the strengths; weaknesses; opportunities; and threats (SWOT) analysis of using Web 2.0 technology in private university libraries of Bangladesh, summarizes the SWOT analysis at a glance, and lastly concludes the chapter.

**Chapter 6:** answers the research questions, presents the practical implications of the study for the LIS professionals and for the academics and students, discusses the limitations of the research, as well as finally presents directions for future research.

## **Chapter 2**

### **Literature Review**

#### **2.1 Introduction**

The chapter begins with a brief concept of Web 2.0. This is followed by a review of the literature. Secondly, this chapter also includes review of literature related to features of Web 2.0 of library services. Subsequently, the third section presents the usage and application of it in academic libraries. Finally, the literature review is summarized the impact of Web 2.0 on academic libraries. The search tactic was applied consisted of use of search terms such as —use of Web 2.0 technologies by academic librarians, Web 2.0 in university libraries, librarian perceptions, academic perceptions, and student perceptions on Web 2.0 tools, etc. Searches were conducted multiple times from the period of December 2012 – January 2013. Different databases were used such as Emerald database (accessed via Ayesha Abed Library of BRAC University), EBSCO host, HINARI, AGORA (accessed via Dhaka University Central Library) which included: Library, Information Science and Technology Abstracts (LISTA), The Education Resource Information Centre (ERIC), as well as The E-Journals database. Also some articles were retrieved from Science Direct database. Other relevant articles were retrieved by using search engine, Google Scholar.

#### **2.2 Web 2.0 Concept**

The concept of Web 2.0 has gained immense prominence in many library and information establishments. In particular, Web 2.0 plays key roles in dispensation of information, knowledge and communication services in university libraries (Makori, 2012). Introducing the term in 2004, Musser and O'Reilly (2006) define Web 2.0 as: “Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them. Hayman and Lothian [15, p. 5] define it as “a cluster of web-based technologies services with a social collaboration and sharing component, where the community as a

whole contributes, takes control, votes and ranks contents and contributions". "Web 2.0" can be well articulated as the shift from simply being a website and a search engine to a shared networking space that drives work, research, education, entertainment and social activities, which essentially all people do (Storey, 2006). Meanwhile, in an attempt to explain the meaning of Web 2.0, two senior professionals of National Library of New Zealand (Manager of School Services Centre and National Adviser Schools Collection) consider, "Web 2.0 is a second wave that covers web tools and services such as weblogs, wikis, Ajax, RSS, and tagging". Web 2.0 tools allow users to create, describe, post, search, and communicate online content in various forms – which range from music, bookmarks to photographs and documents (Macasskill and Owen, 2006). Web 2.0 is more about the human aspects of interactivity. It's about conversations, interpersonal networking, personalization, and individualism. The emerging modern user needs the experience of the web, and not just content, to learn and succeed. Web 2.0 is ultimately about a social phenomenon – not just about networked social experiences, but about the distribution and creation of web content itself, characterized by open communication, decentralization of authority, freedom to share and reuse, and the market as a conversation (Abram, 2005, p. 1). Coombs (2007) notes that: 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. According to Kelly (2008), the key Web 2.0 concepts include: an attitude, not a technology; the network effect; openness; the long tail; trust your users; network as a platform; always beta and small pieces, loosely coupled. Web 2.0 is not any advancement in technology. Miller (2005) opines that the people are hyping the Web 2.0 and Notess (2006) asserts that Web 2.0 indicates a second wave of web techniques which makes information sharing, dissemination, and collaboration among the users more interactive. Web 2.0 has been described and considered by different people in a number of different ways. Davis has also referred to Web 2.0 as an attitude not a technology. Franklin and Van Harmelen (2007) have called it a technology change. Downes (2005); Virkus (2008) call it a community-driven online platform or an attitude rather than technology. Geser (2007) calls it the second generation of web-based tools and services.

### 2.3 Features of Web 2.0

Aharony (2008, p. 2) sums up the main characteristics of Web 2.0, that it is of “individual production and user-generated content (self-publishing and expression)”, it has a “capacity for ‘harnessing the power of the crowd’”, “its architecture of participation [. . .] means that a service designation can improve and facilitate user participation”, the “network effect [is an] increase in value to existing users of a service”, and its “openness, [. . .] networking with open standards”. Zorica and Emeric (2009, p. 480) point out that, “setting a standard in the context of Web 2.0, would be problematic as its definition is ‘constant beta’ i.e. not a fully developed product”. Many Web 2.0 technologies like blogs, micro blogs, wikis, syndication of content through RSS, social bookmarking, media sharing, networking sites, and other social software artifacts are incorporated in teaching and learning process in higher education. These technologies provide unique and powerful information sharing and collaborative features in teaching as well as with colleagues, administrative, and libraries’ staff (Grosbeck, 2009).

Blogging is one of the most highly favored features of the Web 2.0. A weblog, or blog, is just an online diary where entries are displayed in reverse chronological order and in addition to text messages; postings can include photos, links, video and audio. Tools, like Blogger and Word Press, make the creation of blogs very easy. Wiki is a web site creation and authoring tool that allows a group of people collaboratively to edit web site content. RSS is a format used for the automatic syndication of content. Instead of checking websites for daily updates, people can subscribe to the website RSS feed and get notified every time new content is added to the website. Tagging is an open and informal method of categorizing that allows users to associate keywords or “tags” with online content (Downes, 2005; Farkas, 2007). Podcasts, are created and hosted at sites such as our media, or vodcasts, are posted at YouTube or elsewhere, provide another means for training through Web 2.0. Podcasts and vodcasts may be created quickly, tested, and revised for improvement. Web 2.0 technologies such as- micro-blogging and text messaging offer reference departments tools to facilitate instant communication in the event of an emergency or an urgent matter. Instant messaging (IM) tools provide another means for internal, emergency communication. While the public desks at many libraries are using IM services, to communicate with users, the possibilities for aiding interdepartmental communication

between service points may not have been considered. Chu and Meulemans (2008) report that, “online social networking sites are very popular among the students. Social networking sites can be used in university libraries for imparting library instruction, reference, and outreach”. “Online photo collections offer staff members a resource for learning library locations and referring users to them when answering directional questions” (Currie, 2010).

## **2.4 Usage and Application of Web 2.0 in Academic Libraries**

Web 2.0 has been strongly applied in the field of e-commerce, online advertising and other online services. However, it has not been a widely applied technology in the library community (Maness, 2006a). There are a few studies on the content surveys of library websites regarding the adoption of these technologies. Tripathi and Kumar (2010) surveyed the contents of 277 university library websites in Australia, Canada, the UK, and the USA. They found that instant messaging was the most popular Web 2.0 tool, used in 43.7 percent of libraries. Other tools included blogs (33.2 percent) and RSS (31.4 percent). Purposes, for which Web 2.0 technologies used, were also studied. Kim and Abbas (2010) surveyed websites of a small sample of 230 academic libraries worldwide. The technologies found were RSS (73 percent), blog (65 percent), personalized content (30 percent), podcast (27 percent), bookmark (22 percent), wiki (20 percent), Twitter (15 percent), folksonomy (13 percent), and tagging (12 percent).

Another international study was conducted by Harinarayana and Raju (2010). They selected 100 universities from the lists of world university rankings. Fifty-seven universities were offering at least one Web 2.0 service. The content analysis of these 57 websites revealed that RSS and IM were used by 37 libraries and blogs were offered by 15 libraries. Wiki, podcast, and vodcast were among the least used technologies. Chua and Goh (2010) studied 120 public and academic library websites from North America, Europe, and Asia. The findings suggested that the order of popularity of Web 2.0 applications implemented was: blogs, RSS, instant messaging, social networking services, wikis, and social tagging applications.



In North America, Liu (2008) investigated websites of 111 ARL member libraries and found RSS, blogs, wikis, podcasts, and personal bookmarks/tagging in use in various libraries. Xu, Ouyang and Chu (2009) surveyed 81 academic library websites in New York State. They found that 34 (42%) libraries incorporated one or more Web 2.0 applications for various purposes. The maximum usage of the Web 2.0 technologies was blogs while the least adopted technology named podcasting in the libraries. Shrager (2010) studied websites of nine academic law libraries in the Washington DC metro area. Eight libraries used some form of Web 2.0 technologies. The applications included IM, RSS, blogs, social bookmarking, user reviews and SNS, respectively, in order of frequency. Morris and Bosque (2010) evaluated 21 US academic library websites and subject guides to compare the use of Web 2.0 tools. They found that Web 2.0 features were lower in subject guides than that in library websites in general. Web 2.0 features found blogs, chat, RSS, tag clouds, tagging, user reviews, wikis, and YouTube. In a survey of academic libraries in New Jersey, USA and Hong Kong, China, Nesta and Mi (2011) found that instant messaging, blogs, RSS, Facebook, and Twitter were used but the students' participation in these technologies was low. In UK, Shoniwa and Hall (2007) audited library websites of 152 higher education institutions. Web 2.0 tools were found RSS (18 percent), blogs (11 percent), and podcasts (5 percent). In China, Si et al. (2009) searched Web 2.0 components in library websites of 30 top-ranked universities. Two-thirds of libraries adopted one or more such technologies. Applications of various technologies in a descending order include RSS, IM, toolbar, blog, Ajax, tag/folksonomy, and wiki. Another Chinese study was presented in Han and Liu's (2010) paper. They selected 38 top ranked universities and found that 31 of them used at least one kind of Web 2.0 tools. The tools used, in their order of frequency, were OPAC 2.0, RSS, blog, IM, SNS, and wiki. Linh (2008) conducted a similar research in Australia by conducting a survey of 47 Australian and New Zealand universities. Of the total 47, 32 university libraries (26 in Australia and six in New Zealand) used Web 2.0 technologies. The findings of the study showed 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". Mahmood and Richardson (2011) surveyed 100 member academic library websites of the Association of Research Libraries (USA). They found that all libraries were using various Web 2.0 tools. Blogs, RSS, IM, Social Networking sites, Mashups,

Podcasts, Microblogs, and Vodcasts were widely adopted while wikis, photo sharing, presentation sharing, virtual worlds, vertical search engines, etc. were used less. Makori (2012), investigated African University libraries. The results indicated that the overall picture of Web 2.0 systems use and application in African university libraries was at its lowest level as compared to developments in other parts of the world. But, university libraries in South Africa had made good progress towards the use of Web 2.0 tools, although many were yet to realize the new dispensation. Arif and Mahmood (2012) surveyed Pakistani libraries websites. They found that Pakistani librarians adopted some popular Web 2.0 technologies in their professional and personal lives. Although all the library professionals were using the internet but 20% of respondents were unable to use Web 2.0 technologies easily. The frequency of use revealed that Pakistani librarians were generally less inclined toward adoption of Web 2.0 technologies. Virkus (2008) also found that only a few LIS educators had successfully adopted Web 2.0 technology for teaching and learning. Tyagi and Kumar (2010) surveyed 4 selected universities' faculties at Western Uttar Pradesh. They sought to assess awareness of Web 2.0 and find out the use of wikis, blogs, RSS feed, social networks, podcasting, SNS, Mashup by the university faculties in Western Uttar Pradesh. The percentage of respondents while using Web 2.0 tools was small but this was a good start by the faculties in Western Uttar Pradesh which encourage other faculties of the country.

The use of Web 2.0 tools differs from one library to another library. The following table below indicates purposes of using of Web 2.0 tools in libraries:

**Table 2.1: Use of Web 2.0 in library**

<b>Web 2.0 application</b>	<b>Purposes of using Web 2.0</b>	<b>Authors</b>
Blogs	Library news and events Announce New books Book reviews Book discussions Marketing the library Research tools Announce new databases	Xu, Ouyang and Chu (2009); McIntyre and Nicolle (2008); Linh (2008); Jowitt (2008)
Wiki	Subject guides Project planning Policy manuals Resource listings Training resources	Long (2006); Linh (2008); Jowitt (2008)
RSS	Library news and events New books Newest-journals New databases Custom catalogue search	Xu, Ouyang and Chu (2009); Linh (2008); Jowitt (2008)
Instant Messenger (IM)	Reference services Advice on library services Guidance with resources	Xu, Ouyang and Chu (2009); Foley (2002); Linh (2008); Jowitt (2008); Murley (2008)
Photo-Sharing Tools	Library news Library promotion General Library tours	Linh (2008); Jowitt (2008)
Bookmarking Tools	Searching the library catalogue Guidance with resources Book reviews	Bianco (2009); Xu, Ouyang and Chu (2009); Linh (2008); Jowitt (2008)

Video Sharing Tools	Library promotions Library instructions Library orientation/ tours	Linh (2008); Jowitt (2008)
Social Networking Tools	Imparting Library Instructions Reference services Outreach services Information literacy program	Chu and Meulamans (2008); Linh (2008); Jowitt (2008)

**Source: Khiwa (2010)**

## 2.5 Impact of Web 2.0 on Academic Libraries

According to Nicholas, et al. (2011) Web 2.0 technologies are beginning to have a significant impact on scholarly communication and the research process on university libraries. Web 2.0 technologies [. . .] may create changes in how libraries provide access to their collections and provide user support to their clients (Maness, 2006). Garcia, Rey, Ferreira, and Puerto [6] note that Web 2.0 has potential for universities in developing new models of interaction and new forms of exciting education. Sendall, Ceccucci, and Peslak [11] review the importance of the implementation of Web 2.0 tools in the classroom. They conclude that these skills are also critical for students to prepare them for the job market. They also claim that educators should engage students with Web 2.0. Thompson claims that Web 2.0 can “change the model of higher education model from the traditional classroom framework to an asynchronous 24/7 mode”. Tripathi (2009) discusses how Web 2.0 tools can be used to woo patrons towards using the library resources and services. These can be of tremendous help for providing services to the distance learners. Bradley (2007), Huffman (2006) as well as King and Porter (2007) highlight how the Web 2.0 tools can be used for enhancing library services. The Horizon Report (2007) highlight that Web 2.0 tools like user- create content; social networking, mobile phones will have a considerable influence on higher education. The ACRL research committee (2007) has highlighted that the Web 2.0 tools and technologies will offer new opportunities for the design and delivery of library resources and services but will also make more demands on Library staff and system.

## **2.6 Summary**

The review of literature reveals that some studies in libraries have reported on LIS professionals' perceptions or students' views from multiple perspectives of Web 2.0 technologies in a particular country or in a particular region of the world, etc. But there is a lack of studies about the usage of Web 2.0 technologies in libraries, for instance, how many libraries in Bangladesh have adopted Web 2.0 technologies, why the libraries have adopted these technologies, etc. Although this technology has gained its popularity in academia and students, the meaning and perceptions of it are still fuzzy to many LIS professionals as well as to academics and students in Bangladesh. Furthermore, there is an inadequacy of literature about the perceptions of LIS professionals as well as perceptions of academics and students with regard to Web 2.0 concepts, strengths, weaknesses, opportunities, weaknesses and threats of using this technology in libraries, purposes of using Web 2.0 tools and perception about the future of this technology in libraries.

Therefore, the present study has made an attempt to explore the perceptions of LIS professionals as well as perceptions of academics and students regarding their understanding of Web 2.0 concept; strengths, weaknesses, opportunities, and threats of using Web 2.0 technology; purposes of using Web 2.0 tools, and perception about the future of Web 2.0 technology in libraries of Bangladesh. This research contributes to establish clear concepts of Web 2.0, and bridging the gap between libraries of Bangladesh which use Web 2.0 technology and those which don't.

## **Chapter-3**

### **Use of Web 2.0: Perceptions of Library and Information Science (LIS) Professionals**

#### **3.1 Introduction**

Web 2.0 refers generally to web tools that, rather than serve as a forum for authorities to impart information to a passive, receptive audience, actually invite site visitors to comment, collaborate, and edit information, creating a more distributed form of authority in which the boundaries between site creator and visitor are blurred (Oberhelman, 2007). In this chapter, the perceptions of Library and Information Science (LIS) professionals are explored, who use Web 2.0 technologies to deliver services to users. The rest of this chapter is structured as follows: The second section discusses the research methods, including the sample, questionnaire design, data collection and analysis. The third section discusses and analyzes the findings of the study; and the fourth section summarizes the findings.

#### **3.2 Research Methods**

An interview method was adopted with the help of a structured questionnaire to understand the effective use of Web 2.0 technologies in private university libraries. However, it was prepared the questionnaire and interviewed those LIS professionals who were using Web 2.0 to deliver education for gathering their perceptions and experiences regarding Web 2.0 technologies usage in private university libraries of Bangladesh.

### ***3.2.1 The Sample***

Visiting the selected five private university libraries of Bangladesh, interviews were conducted and 35 (Thirty-five) LIS professionals were selected, who were using Web 2.0, to explore their attitude regarding Web 2.0 usage in libraries. These libraries were Ayesha Abed Library (AAL), BRAC University; East-West University Library, (EWUL); Independent University, Bangladesh, Library (IUBL); North South University Library (NSUL); and Daffodil International University Library (DIUL).

### ***3.2.2 Questionnaire Design***

Pickard (2007) states that questions that are more relevant to the topic, should be asked first and demographic data questions should be asked towards the end of the questionnaire. Pickard advises that questions which are simple should be asked first and complex questions which requires respondent's opinion should be asked at a later stage after engaging with the respondent. This approach is more appealing to the respondents. However, the questionnaire for the interview on "Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Library and Information Science (LIS) Professionals" was designed to collect data about Web 2.0 in libraries that included both open and closed-ended questions and consisted of four major sections. Section 1 contained eight questions (1.1-1.8) regarding the identification of Web 2.0 technology, how many years Web 2.0 was introduced in his/her library, how many students were acquiring education using Web 2.0 technology, whether Web 2.0 could improve knowledge sharing and collaboration or not, whether it could create opportunities for librarians to market their services or not, whether it could enable libraries to reach a wide range of their users in the shortest time and to attract new users or not, as well as some major merits and demerits of using Web 2.0 in libraries. Section 2 included nine questions (2.1-2.9) concerning whether Web 2.0 used by all library staff or not, whether the library personnel had been trained on use of Web 2.0 tools or not, what kind of Web 2.0 technologies their library was using, the management of Web 2.0 services, the usefulness of Web 2.0 for library service; based on 7-point Likert scales, the required skills to use Web 2.0, whether the library personnel had been taken any initiative



to adopt Web 2.0 tools or not, which Web 2.0 technologies were adopted for his/her library, and whether Web 2.0 was more comfortable technology than other technologies or not. Section 3 contained five questions (3.1-3.5) focused on whether Web 2.0 technology could create the high workload, the limited quality of interaction as well as uncertainty about the ownership and assessment issues or not, whether Web 2.0 technologies were beyond the control of the librarians in their library or not, the major constraints of Web 2.0 technology, based on a 7-point Likert scale, whether the academic IT facilities were enough for Web 2.0 tools in their library or not, as well as the observations, comments, and recommendations of library personnel about the use of Web 2.0 in academic libraries. Section 4 included the background information of the interview participants. Initially a pilot interview was conducted from five LIS professionals who had practical knowledge and experiences with Web 2.0 technology. Their valuable comments and suggestions were thoroughly considered during the modification of the questionnaire in order to ensure valid understanding of the questions. Above all, the design of the questionnaire was finalized after consulting with the academic supervisor.

### ***3.2.3 Data Collection and Analysis***

The interview method was used with the help of a structured questionnaire to explore the attitude of LIS professionals to Web 2.0 technologies. The methodology included a combination of quantitative and qualitative methods. Fidel (2008) suggests that the use of both quantitative and qualitative methods provides a deeper understanding of the phenomenon under study.

A lot of data and information was gathered through the interviews. Responses to closed-ended questions in particular on 7-point Likert scales were analyzed using the descriptive analysis techniques of SPSS 16.0, and responses to other closed-ended questions were analyzed using general statistics. Responses to the open-ended questions were coded to identify the themes within the questionnaire data that relates to the research questions of this study. The qualitative data had been interpreted using the code P1, P2, P3.....to indicate interview participants 1, 2, 3.....etc. However, the data were collected during the period of 5th February, 2013 - 21 April, 2013.

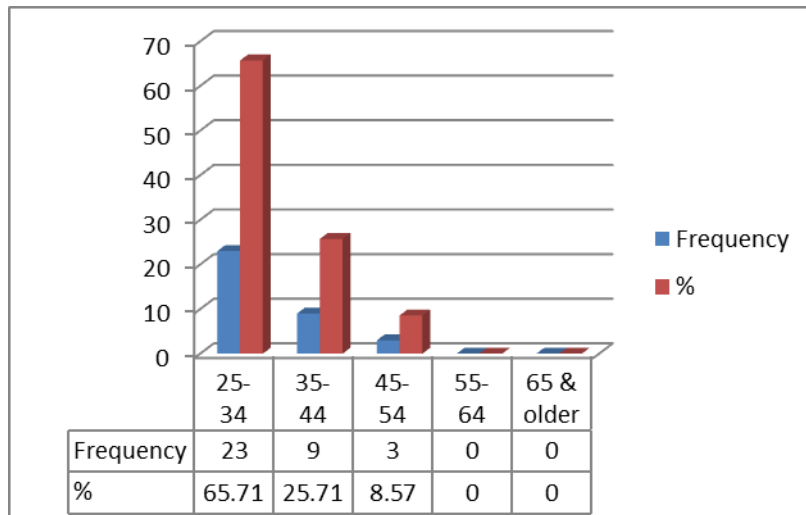
### 3.3 Findings

The interview results indicated that 35 (Thirty-five) responses were received from LIS professionals in five private university libraries about Web 2.0 technologies usage in their libraries and each participant discovered experience about their usage of Web 2.0 tools. These university libraries had adopted one or more Web 2.0 tools, such as- E-mail group, IM, Blogs & Wikis, Image Sharing Tool, Video Sharing tool, Social networking tool, Social Bookmark, RSS Feed, Book Review, and User comment, while a implementing of those tools in individual libraries varied greatly.

#### 3.3.1 Profile of the Interviewees

##### 3.3.1.1 *Age distribution of the interviewees*

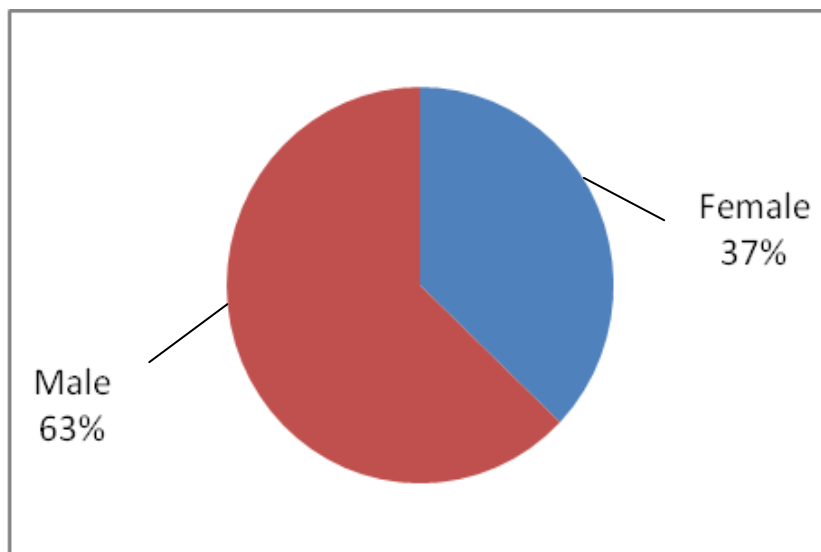
**Figure 3.1** shows that in total 35 interviewees from different types of libraries, a large number 23 (66%) of interviewees is from the age group of 25-34 years, closely followed by 9 (26%) interviewees age group of 35-44 years and 3 (9%) of interviewees age group of 45-54 years.



**Figure 3.1: Age distribution of the interviewees**

**3.3.1.2 Gender distribution of the interview participants**

**Figure 3.2** shows that among 35 interviewees, 22 (63%) are male and 13 (37%) are female. This suggests a balance between male and female interviewees.



**Figure 3.2: Gender distribution of the interview participants**

### 3.3.1.3 Distribution of interviewees' working position

The responses were received from six categories of interviewees, in accordance with their working position.

**Table 3.1: Distribution of interviewees' working position**

Working Position	No. of Interviewees	Percent	Cumulative Percent
Library Head/ Librarian	5	14.29	14.29
Deputy Librarian	2	5.71	20.00
Senior Assistant Librarian	2	5.71	25.71
Assistant Librarian	9	25.71	51.43
Library Officer/ Junior Assistant Librarian	15	42.86	94.29
Others: Assistant System Programmer, System Programmer	2	5.71	100.00
Total	35	100	

**Table 3.1** indicates that the percentage of responses respectively come from “Library Officer/ Junior Assistant Librarian” (43%), “Assistant Librarian” (26%), “Library Head/ Librarian” (14%), and “Deputy Librarian” as well as “Senior Assistant Librarian” (6%).

### 3.3.1.4 Experience in library profession of interview participants

The responses were received from the interview participants about the working years in library profession.

**Table 3.2: Experience in library profession of interview participants**

Working Year	No. of Interviewees	%
0—5	13	37.14
6—10	12	34.29
11—15	4	11.43
16—20	5	14.29
21 & above	1	2.86
Total	35	100

**Table 3.2** indicates that about 13 (37%) interview participants are less than five years of working experience in the library, while 12 (34%) interviewees are less than ten years of working experience, followed by 4 (11%) interviewees are less than 15 years of working experience, 5 (14%) interview participants are less than 20 years of work experience, and only 1 (3%) interviewee is more than twenty years working experience in the library.

### **3.3.2 Web 2.0 Concepts, Merits and Demerits of Using Web 2.0 Tools and Technologies**

#### ***3.3.2.1 Conceptual issues of Web 2.0***

The question was arranged with the combination of both Web1.0 technology and Web 2.0 technology. Such as- MP3 is the version of Web1.0 where in Web 2.0, MP3 is known as IPod, followed by Britannica Online is the version of Web1.0 where in Web 2.0, Britannica Online is called as Wikipedia; Personal Website is the version of Web1.0 where in Web 2.0, Personal Website is called as Blog and Directory (taxonomy) is the version of Web1.0 where in Web 2.0, Directory (taxonomy) is called as Tag (folksonomy). Also, there were four types of Web 2.0 tools included. Such as- RSS, Facebook, YouTube, and Wiki.

Interviewees were asked to identify the Web 2.0 technologies and what was their basic understanding about them. The data, received from the interview participants, was summarized regarding the identification of Web 2.0 technology (**see table 3.3**).

**Table 3.3: Conceptual issues of Web 2.0**

Web 2.0 Tools	Total Interviewees	Frequency	Percentage
iPods	35	5	14.29
RSS	35	25	71.43
Facebook	35	35	100
Wikipedia	35	22	62.86
Blogs	35	33	94.29
YouTube	35	28	80.00
Personal Website	35	11	31.43
Britannica Online	35	2	5.71
MP3	35	4	11.43
Wikis	35	21	60.00
Tags (folksonomy)	35	13	37.14
Directories (taxonomy)	35	2	5.71

**Table 3.3:** indicates that “Facebook” is in the highest position with 100 percent, while “Blog” with 94 percent, is in the second highest position, followed by “YouTube” (80%), “RSS” (71%), “Wikipedia” (63%), “Wikis” (60%), “Tags (folksonomy)” (37%), “Personal Website” (31%), “iPods” (14%), “MP3” (11%), as well as “Britannica Online” and “Directories (taxonomy)” (6%).

### 3.3.2.2 *Introducing Web 2.0 in library*

The participating library's professionals were asked when Web 2.0 technology was introduced in their libraries. The data, received from the interviewees, was summarized about introducing Web 2.0 technology in their libraries.

**Table 3.4: Introducing Web 2.0 in library**

Introducing Year of Web 2.0	Frequency	Percentage
Less than 1 year	0	0
1-3 years	0	0
4-6 years	28	80
7-9 years	7	20
Total	35	100

**Table 3.4:** delineates the year of using Web 2.0 in libraries. Among them, 80% of the libraries (n=35) have been using Web 2.0 for 4-6 years, while 20% of them have been using it for 7-9 years.

### 3.3.2.3 *Acquiring education of students through Web 2.0*

Interview participants were asked how many students were acquiring education in their libraries using Web 2.0 technology. The data, received from the participants, was summarized regarding the acquiring education of students using Web 2.0 technology.

**Table 3.5: Acquiring education of students through Web 2.0**

No. of Students	No. of Interviewees	%
50-100	0	0
100-250	0	0
250-500	0	0
Over 500	28	80
All student	7	20
Total	35	100

**Table 3.5** delineates that the highest percentage (80%) of the libraries (n=35) offer education using Web 2.0 technology for over 500 students, while 20% of the libraries offer education for all students.

#### **3.3.2.4 Knowledge sharing and collaboration through Web 2.0**

Interviewees were asked whether Web 2.0 technology could improve knowledge sharing and collaboration or not. **Table 3.6** shows that hundred percent (100%) of the interview participants indicate that Web 2.0 technologies can improve knowledge sharing and collaboration.

**Table 3.6: Knowledge sharing and collaboration through Web 2.0**

Response	No. of Interview Participants	Percentage
Yes	35	100
No	0	0
Total	35	100



### 3.3.2.5 Opportunities for librarians to market their services through Web 2.0

Interview participants were asked whether Web 2.0 technologies were excellent opportunities for librarians to market their services and collections to their clientele or not. **Table 3.7** shows that hundred percent (100%) of the interviewees indicate that Web 2.0 can create excellent opportunities for librarians to market their services and collections to their clientele.

**Table 3.7: Opportunities for librarians to market their services through Web 2.0**

Response	No. of Interviewees	Percentage
Yes	35	100
No	0	0
Total	35	100

### 3.3.2.6 The ability of Web 2.0 technologies for library to attract new users and to reach the maximum users

Interviewees were asked whether Web 2.0 technologies permitted libraries to reach a wide range of their users in the shortest time and to attract new users or not. **Table 3.8** shows that hundred percent (100%) of the interview participants specify that Web 2.0 technologies facilitate libraries to reach a wide range of their users in the shortest time and to attract new users.

**Table 3.8: The ability of Web 2.0 technologies for library to attract new users and to reach the maximum users**

Response	No. of Interviewees	Percentage
Yes	35	100
No	0	0
Total	35	100

### 3.3.2.7 Merits of using Web 2.0 in library

The participating library's professionals were requested to identify the merits of Web 2.0 technologies in their libraries. The data, received from the interview participants, was summarized regarding the merits of Web 2.0 technologies.

**Table 3.9: Merits of using Web 2.0 in library**

Merits of Web 2.0	Total Interviewees	Frequency	Percentage
Build community spirit among students	35	25	71.43
Increase importance of the library to the user	35	27	77.14
Improve the library image	35	27	77.14
Improve communication of the library with users and improve in communication among librarians	35	28	80.00
Overcome isolation and geographical distance	35	25	71.43
Share library news and events	35	29	82.86
Enhance librarians' knowledge	35	22	62.86
Better understanding of students' needs	35	26	74.29
Others: Develop students and departments; Share views and ideas with others to further improve the services and facilities and Improve personalized services	35	3	8.57

**Table 3.9** indicates that the highest percentage is 83 percent and concerns to share library news and events, while the second highest position is 80 percent and concerns to improve communication of the library with users as well as to improve in communication among librarians, closely followed by “Increase importance of the library to the user” and “Improve the library image” with 77%, are in the same position, “Better understanding of students' needs” (74%), “Build community spirit among students” and “Overcome isolation and geographical distance” with 71.43%, “Enhance librarians' knowledge” (63%), etc.

### 3.3.2.8 Demerits of using Web 2.0 in library

The participating LIS professionals were requested to identify the demerits of Web 2.0 technologies in their libraries. The data, received from the interviewees, was summarized regarding the demerits of Web 2.0 technologies.

**Table 3.10: Demerits of using Web 2.0 in library**

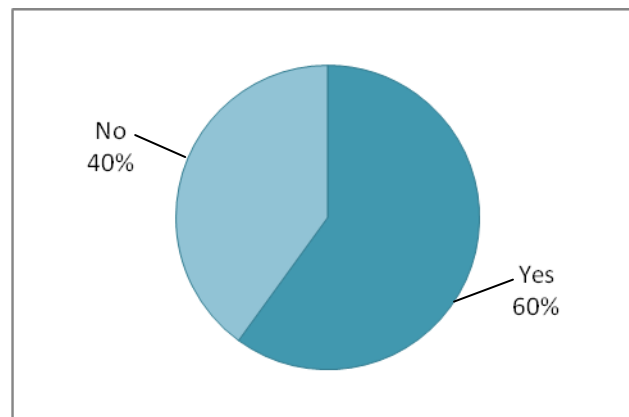
Demerits of Web 2.0	Total Interviewees	Frequency	Percentages
Create unpleasant elements that can sabotage social websites in many ways	35	22	62.86
Create additional workload for students as well as educators	35	8	22.86
Create selective or disruptive interaction among students	35	12	34.29
Create a risk to the security and privacy of users	35	11	31.43
Limit online socialization	35	7	20
Difficult to ensure reliability of the service	35	6	17.14
Others: Limit technological skills	35	1	2.86

**Table 3.10** indicates that the statement “creation of unpleasant elements that can sabotage social websites in many ways” is in the highest position with 63 percent, while the statement “creation of selective or disruptive interaction among students” with 34 percent, is in the second highest position, closely followed by the statements “Creation of a risk to the security and privacy of users” ( 31%), “Create additional workload for students as well as educators” (23%), “limitation of online socialization” (20%), “Difficult to ensure reliability of the service” (17%), etc.

### 3.3.3 Usage of Web 2.0 Tools and Technologies

#### 3.3.3.1 Usage of Web 2.0 by all library staff

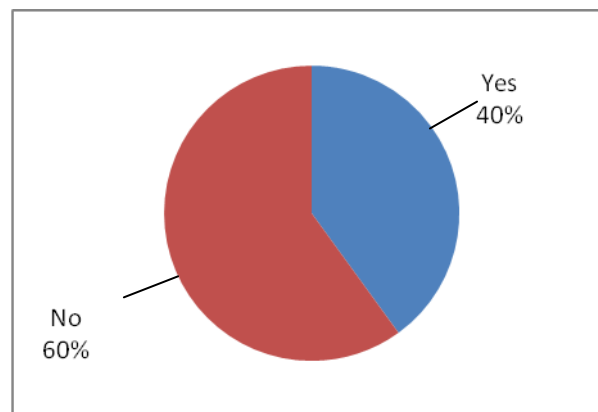
The participated professionals were asked whether Web 2.0 technology was used by all library personnel or not. **Figure 3.3** shows that 21 interviewees (60%) indicate that Web 2.0 technologies are used by all library staff, while 14 (40%) interview participants indicate that these are not used by all library staff.



**Figure 3.3: Usage of Web 2.0 by all library staff**

### 3.3.3.2 Training on the use of Web 2.0 technology

Interviewees were asked whether they had been trained on use of Web 2.0 tools or not. It has found in this study that 21 interviewees (60%) indicate that they have not received training on Web 2.0, compared to 14 (40%) interviewees who have been trained on use of Web 2.0 tools (see figure 3.4).



**Figure 3.4: Training on the use of Web 2.0 technology**

### 3.3.3.3 Status of the usage of Web 2.0 in library

The participating interviewees were requested to identify which Web 2.0 technologies their libraries were using. The data, received from the interviewees, was summarized regarding the usage of Web 2.0 technologies in libraries.

**Table 3.11: Status of the usage of Web 2.0 in library**

Web 2.0 Tools	Total Interviewees	Frequency of Use	Percentage
E-mail Group	35	28	80
Instant Messenger (e.g. Zoho chat, AOL)	35	14	40
Blogs & Wikis	35	28	80
Image Sharing Tool(e.g. Flickr, Picasa)	35	14	40
Video Sharing Tool (e.g. YouTube, Metacafe)	35	21	60
Social networking tool (e.g. Facebook, Twitter, MySpace, LinkedIn)	35	35	100
Social Bookmark	35	7	20
RSS Feed	35	14	40
Book Review	35	14	40
User Comment	35	35	100
Others:	35	0	0

**Table 3.11** indicates that different types of “Social Networking Tool” and “User Comment” are jointly in the highest position with 100%, while “E-mail Group” and “Blogs & Wikis” with 80%, are jointly in the second highest position, followed by different types of “Video Sharing Tool” (60%), “Instant Messenger”, “Image Sharing Tool”, “RSS Feed” and “Book Review” are in the same position with (40%), as well as “Social Bookmark” (20%).

#### ***3.3.3.4 Management of Web 2.0 services***

When one considers how so many libraries have readily (and successfully) created vibrant, attractive materials within the online areas of Web 2.0 services, these earlier attempt to offer the reverse, to bring Web 2.0 into the online area of the library, may seem quixotic and quaint. In fact, the evidence is that by abandoning concerns about control and territory, some libraries are managing to promote their Web 2.0 services in ways that are better and more dynamic than ever before (Harinarayana and Raju, 2010). This study also found that the interviewees reported their opinions from different point of view.

The opinions of the interviewees were categorized in the following ways:

- Web 2.0 services were managed by library personnel
- Web 2.0 services were managed by specialized person
- Web 2.0 services were systematically managed

##### ***3.3.3.4.1 Web 2.0 services were managed by library personnel***

Most of the interviewees reported that all of the library professionals were responsible for managing Web 2.0 services. In addition, P3 stated that all of the library staff was doing their work using Web 2.0 tools, but no one specific for doing or using Web 2.0 tools. Therefore, all of them were doing their work using the advantage of Web 2.0 tools. On the other hand, P4 reported that their library staffs were good enough to manage Web 2.0 services. Similarly, P8 said that they didn't need any specialized person to deal Web 2.0 services. All of their colleagues including head of the library jointly handled these services in their library. Furthermore, P9 mentioned that they were using software like Drupal, Dspace, Koha, and Vufind. All of these softwares were Web 2.0 supported features like RSS, Facebook, Book Review, Tag, etc. These softwares were managed by individual personnel. So they didn't have separate person to manage it but they worked together to maintain it.

#### ***3.3.3.4.2 Web 2.0 services were managed by specialized person***

Most of them reported that they had specialized personnel to manage Web 2.0 services. For example, P10 stated that they had a specialized person to manage Web 2.0 services who had adequate IT skill and web management skill as well as clear and sound subjective knowledge. In addition, P15 reported that they had two IT persons to implement and maintain Web 2.0 services. In this regard, P25 and P26 told that Web 2.0 services were managed by one of their assistant librarian. Similarly, P29 said that Web 2.0 services were managed by their Library Head and Senior IT Officer.

#### ***3.3.3.4.3 Web 2.0 services were systematically managed***

It was found in this study that P21, P22, P23 and P24 mentioned that they were managing Web 2.0 services systematically.

#### ***3.3.3.5 Ratings on the degree to which interviewees agree/disagree that Web 2.0 tools, are useful for university library services***

Interviewees were asked to indicate the degree to which they agree or disagree about the usefulness of Web 2.0 tools in library services. The responses received from them were measured on 7-point Likert scales in **Table 3.12**, and mean and standard deviation of the responses were calculated according to the following scores: strongly disagree=1.00, disagree somewhat=2.00, disagree=3.00, neutral=4.00, agree=5.00, agree somewhat=6.00, strongly agree=7.00 using the descriptive analysis techniques of SPSS 16.0.



**Table 3.12: Ratings on the degree to which interviewees agree/disagree that Web 2.0 tools, are useful for university library services**

Web 2.0 Tool	N	Min.	Max.	Mean	Std. Deviation
Email Group	35	1.00	7.00	5.26	1.74
Instant Messenger (e.g. AOL)	35	1.00	7.00	4.37	1.83
Blogs and Wikis	35	1.00	7.00	4.51	1.48
Image sharing Tool (e.g Flickr, Picasa)	35	1.00	6.00	3.63	1.52
Video Sharing Tool (e.g. YouTube, Metacafe)	35	2.00	7.00	4.31	1.66
Social Bookmark	35	1.00	7.00	4.00	1.86
Social Networking Tool (e.g. Facebook, Twitter, MySpace, LinkedIn)	35	4.00	7.00	6.09	1.07
RSS Feed	35	1.00	7.00	4.89	1.75
Book Review	35	1.00	7.00	4.46	2.15
User Comment	35	1.00	7.00	5.37	1.78
Valid N (listwise)	35				

***E-mail Group***

The interviewees agree with the statement (with the mean score of 5.26) that E-mail group is useful for library services (see table 3.12).

### ***Instant Messenger***

Ata-ur-Rehman and Shafique (2010) state that Instant Messenger is a very useful tool which may help library professionals to provide library services. It has found in this study that the participated professionals agree with the statement (with the mean score of 4.37) that clients are greatly profited through this technology.

### ***Blogs and Wikis***

Mahmood and Richardson (2011) emphasize that through blogs, libraries are publishing news and marketing their services while, Maness (2006) asserts that a library wiki as a service can enable social interaction among librarians and patrons, essentially moving the study group room online. The interview participants agree with the statement (with the mean score of 4.51) that blogs and wikis are constructive for developing library services.

### ***Image Sharing Tool***

Online photo collections offer staff members a resource for learning library locations and referring users to them when answering directional questions (Currie, 2010). It has found in this study that a minority of the interviewees agree with this statement (with the lowest mean score of 3.63) among all the statements.

### ***Video Sharing Tool***

Video sharing tool allows members to upload videos for everybody to see and vote on their popularity (Virkus, 2008). The interview participants also agree with the statement (with the mean score of 4.00) that video sharing tool is very much helpful for rising library services.

### ***Social Bookmark***

Reference librarians all have favorite reference websites they access using a bookmark or simply through a memorized URL (Currie, 2010). The interviewees agree with the statement (with the mean score of 4.00) that library services can be promoted during the use of social bookmarks.

### ***Social Networking Tool***

Social networking websites are virtual places where the members gather to interact and associate with each other (Yang, 2010). The interviewees agree with the statement (with the highest mean score of 6.09) that both library personnel and clients can be benefited through the use of social networking tools.

### ***RSS Feed***

RSS is used to publish frequently updated works, such as blog entries, news headlines, stock quotes, weather conditions, etc. in a standardized format (Yang, 2010). The interview participants agree with the statement (with a mean score of 4.89) that RSS Feed is helpful in library services.

### ***Book Review***

The participated professionals agree with the statement (with the mean score of 4.46) that if the library uses book review tools of Web 2.0, the library employees and clients will be equally benefited.

### *User Comment*

The aim of the technology is to provide the best possible services, and it welcomes user comments about how it can improve its services to users. The interview participants agree with the statement (with the second highest mean score of 5.37) that library services can be developed through the user comments.

### *3.3.3.6 Requiring skills to use Web 2.0*

Different types of skills were being required to use Web 2.0 tools. The data, received from the interviewees, was summarized regarding the required skills to use Web 2.0 tools.

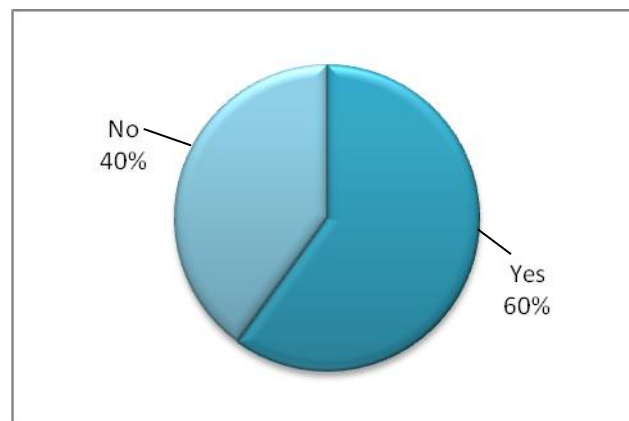
**Table 3.13: Requiring skills to use Web 2.0**

Skills	Total Interviewees	Frequency	Percentage
ICT Skills	35	24	68.57
Information literacy skills	35	29	82.86
Communication skills	35	30	85.71
Collaborative teamwork	35	20	57.14
Research Skills	35	10	28.57
Project management skills	35	2	5.71
Others :Technological skills, Web development skills	35	2	5.71

**Table 3.13** illustrates that the statement “Communication Skills” is in the highest position with 85.71%, while the statement “Information Literacy Skills” with 82.86% is in the second highest position, followed by the statements “ICT Skills” (68.57%), “Collaborative Teamwork” (57.14%), “Research Skills” (28.57%), “Project Management Skills” (5.71%), etc.

### 3.3.3.7 Initiative to adopt Web 2.0 in library

Interviewees were asked whether they had been taken any initiative to adopt Web 2.0 tools in their libraries or not. **Figure 3.5** shows that 21 interview participants (60%) indicate that they have taken some initiatives to adopt Web 2.0 tools, compared to 14 (40%) interviewees who have not taken any initiatives to adopt Web 2.0 tools.



**Figure 3.5: Initiative to adopt Web 2.0 in library**

### 3.3.3.8 Adopting Web 2.0 technology in future in library

The participating LIS professionals were asked which Web 2.0 technologies they will adopt for their libraries. However, the data, received from the interviewees, was summarized regarding the adoption of Web 2.0 technologies.

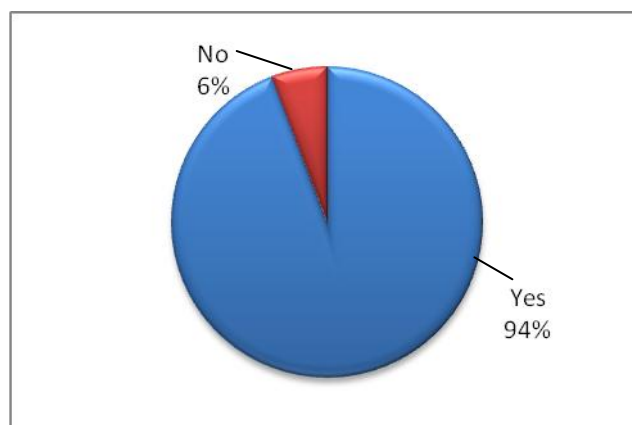
**Table 3.14: Adopting Web 2.0 technology in future in library**

Web 2.0 Tools	Total Interviewees	Frequency	%
Email Group	35	0	0
Instant Messenger	35	14	40
Blogs & Wikis	35	7	20
Image Sharing Tool	35	7	20
Video Sharing Tool	35	7	20
Social Networking Tool	35	0	0
Social Bookmark	35	7	20
RSS Feed	35	7	20
Book Review	35	7	20
User Comment	35	7	20
Others	35	0	0

**Table 3.14** illustrates that “Instant Messenger” is in the highest position with 40 percent, while “Blog & Wikis”, “Image Sharing Tool”, “Video Sharing Tool”, “Social Bookmark”, “RSS Feed”, “Book Review”, and “User Comment” with 20 percent, as well as are in the same position.

### **3.3.3.9 Web 2.0 as a comfortable technology**

Interview participants were asked whether Web 2.0 was more comfortable technology than other technologies or not. **Figure 3.6** shows that 33 interviewees (94%) tell that Web 2.0 is more comfortable technology than other technologies, while only 2 interviewees (6%) don’t agree with this.

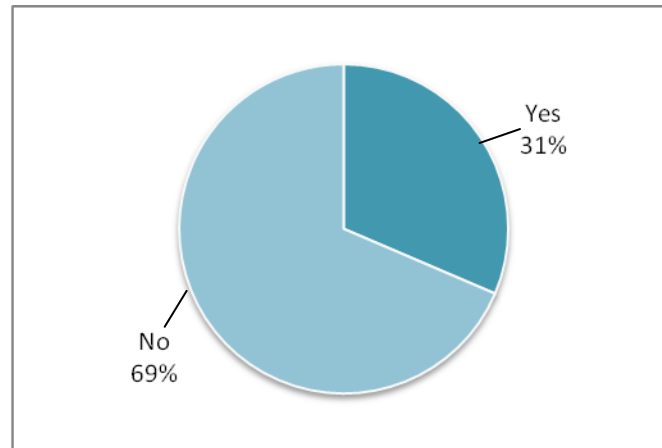


**Figure 3.6: Web 2.0 as a comfortable technology**

### **3.3.4 Constraints Faced by Academic Libraries in Using Web 2.0 Technologies and Recommendations to Overcome the Constraints**

#### ***3.3.4.1 Creating additional workload issues through Web 2.0***

Interviewees were asked whether Web 2.0 technology could generate the high workload, the limited quality of interaction as well as uncertainty about the ownership and assessment issues or not. **Figure 3.7** shows that 24 interviewees (69%) indicate that it can't produce the high workload, the limited quality of interaction as well as uncertainty about the ownership and assessment issues, compared to 11 interviewees (31%) mention that it can make.

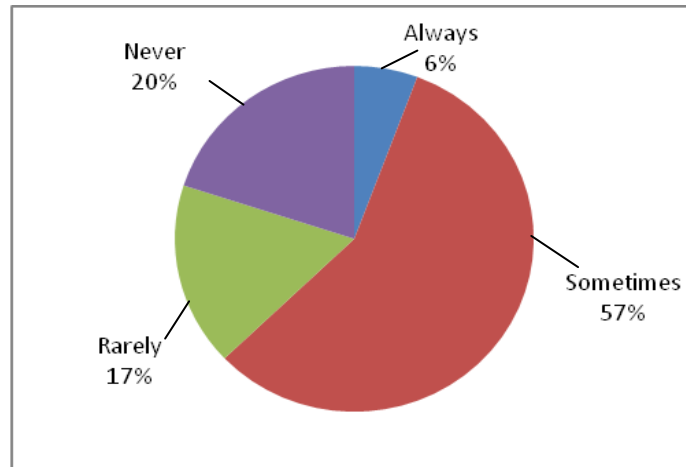


**Figure 3.7: Creating additional workload issues through Web 2.0**

#### ***3.3.4.2 Web 2.0 technologies beyond the control of the librarians***

Interviewees were inquired whether Web 2.0 technologies were beyond the control of the librarians or not. **Figure 3.8** shows that the highest percentage 20 (57%) of interview participants (n=35) indicate that Web 2.0 is sometimes away from the control of librarians, while 7 (20%) of them mention that it is never beyond the control of librarians, and 6 (17%) of the interviewees state that Web 2.0 is rarely beyond the control of librarians. The lowest percentage 2 (6%) of interview participants reveal that it is always away from the control of librarians.





**Figure 3.8: Web 2.0 technologies beyond the control of the librarians**

#### ***3.3.4.3 Level of agreement with the obstacles in the case of using Web 2.0***

The interviewees were asked to indicate their level of agreement with the obstacles in the case of using Web 2.0 technologies. The responses received from them were measured on 7-point Likert scales in **Table 3.15**, and mean and standard deviation of the responses were calculated according to the following scores: strongly disagree=1.00, disagree somewhat=2.00, disagree=3.00, neutral=4.00, agree=5.00, agree somewhat=6.00, strongly agree=7.00 using the descriptive analysis techniques of SPSS 16.0.

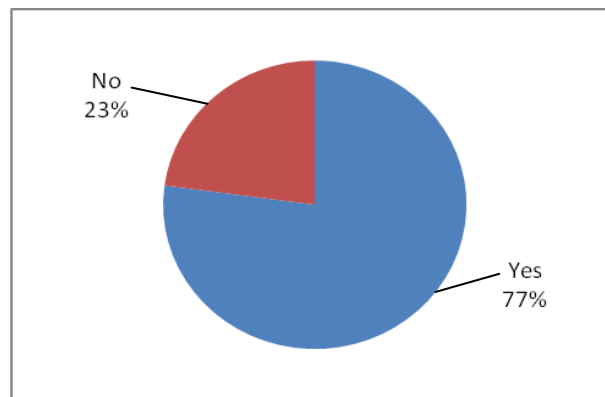
**Table 3.15: Level of agreement with the obstacles in the case of using Web 2.0**

Obstacles of Using Web 2.0	N	Min.	Max.	Mean	Std. Deviation
Time (A)	35	1.00	7.00	4.2	1.78
Staff training(B)	35	1.00	7.00	4.43	1.70
Privacy (C)	35	1.00	7.00	4.09	1.67
Institutional policies (D)	35	1.00	7.00	4.31	2.14
Technological barriers (E)	35	1.00	7.00	3.63	2.17
Valid N (listwise)	35				

**Table 3.15** reveals that the highest mean score is 4.43 for statement (B), while the lowest mean score is 3.63 for statement (E). The second highest mean score is 4.31 for statement (D), conversely the second and third lowest mean score are 4.09 and 4.2 for statements respectively (C) and (A).

#### ***3.3.4.4 Measurement of the academic IT facilities for Web 2.0 in library***

Interviewees were asked whether academic IT facilities of their libraries were enough for Web 2.0 technologies or not. **Figure 3.9** shows that 27 interview participants (77%) mention that academic IT facilities of their libraries are sufficient for Web 2.0, compared to 8 interviewees (23%) answer that academic IT facilities are insufficient for it.



**Figure 3.9: Measurement of the academic IT facilities for Web 2.0 in library**

#### ***3.3.4.5 Observations, comments and recommendations regarding the use of Web 2.0 in academic libraries***

At the end of the interview, the interviewees were asked to fill in their observations, recommendations or comments regarding the use of Web 2.0 tools and technologies in academic libraries. Interviewees expressed some constructive insights on this issue. Their responses which were categorized under the headings included the following:

##### ***3.3.4.5.1 Observations***

Xu et al. (2009) visited the websites of 81 academic libraries in New York State. They found that only 42 percent of institutions had introduced Web 2.0 tools to their libraries. Instant messaging was the most frequently used tool. Other Web 2.0 technologies were blogs, RSS, tagging, wikis, SNS and podcasts, respectively, in order of frequency. In addition, P10 reported that he/she thought that library professionals in academic libraries were not enough trained to adopt Web 2.0 technologies. Sometimes many of them were reluctant to take the initiative to implement this highly applicable technology into this profession. P5 mentioned that many academic libraries did not allow using social networking tools; this was a threat to make popular Web 2.0 technology. However, through proper education that might be overcome.

#### **3.3.4.5.2 Comments**

Downes (2005), a Canadian researcher, believes that the emergence of Web 2.0 is a social revolution rather than a technological revolution. Web 2.0 tools and services foster new modes of connectivity, communication, collaboration, sharing of information, content development and social organization. In this regard, the interviewees made some important comments on Web 2.0; some of them were as follows: P8 thought that Web 2.0 technologies were an integral part for an academic library. Because, with the help of using this technology, users or readers could express their opinion about their libraries' website as well as its services, while P15 expressed that Web 2.0 technologies made the library service more efficient and faster. Similarly, one interviewee reported that Web 2.0 tools were very important for marketing the library materials. It also kept students up-to-date about library (P18), while another interviewee participant mentioned that the use of Web 2.0 is more advantageous for communicating with the users and getting the users feedback. At the same time, Web 2.0 technologies were easy to use for the administrators without having depth IT knowledge (P2).

Conversely, one interviewee made comment somewhat negatively which were: "The key problems with Web 2.0 technology is dependence, I mean people become heavily dependent on the internet. Otherwise, Web 2.0 technology will allow the mass population to communicate with each other and spread ideas rather than receiving their information from a single authority" (P19).

### ***3.3.4.5.3 Recommendations***

“Web 2.0” can be well articulated as the shift from simply being a website and a search engine to a shared networking space that drives work, research, education, entertainment and social activities, which essentially all people do (Storey, 2006). Similarly, Stephens (2006a) says that Web 2.0 is the next embodiment of the worldwide web, where digital tools allow users to create, change and publish dynamic content of all kinds. In addition, P30 tells that Web 2.0 technology is not so popular and used to in Bangladesh. For that reason, more steps should be taken for making it popular and easy to use. P11 states that academic libraries should use Web 2.0 technologies for ensuring better library services, easy access to resources, etc., while P16 tells that Web 2.0 tools and technologies should be used more and more in academic libraries because it makes the tasks faster and less error prone as well as eventually improves service quality. Similarly, P31 states that Web 2.0 services should be spread out widely so that the sharing of information is to be good. Another interviewee reports that the LIS professionals of Bangladesh, who have been working in academic libraries, are not skilled enough in using Web 2.0 technology. Therefore, more training and awareness is needed to overcome it (P14).

### 3.4 Summary

The main goal of this chapter was to explore the perceptions of LIS professionals regarding Web 2.0 usage and application in private university libraries of Bangladesh. Findings explored the identification of Web 2.0 technologies from the interview participants. In the question, few interviewees had given the actual answer. Results also explored the merits of Web 2.0 technologies, such as- Web 2.0 technologies- “share library news and events” (83%) was in the highest position, followed by “Improve communication of the library with users and improve in communication among librarians” (80%) was in the second highest position, “Increase importance of the library to the user” and “Improve the library image” (77%) were in the same position, “Better understanding of students' needs” (74%), “Build community spirit among students”, “Overcome isolation and geographical distance” (71.43%), “Enhance librarians' knowledge” (63%), etc. Findings reported the demerits of Web 2.0 technologies, such as- Web 2.0 technologies “create unpleasant elements that can sabotage social websites in many ways” (63%) was in the highest position, followed by “Create selective or disruptive interaction among students” (34%), “Creation of a risk to the security and privacy of users” (31%), “Create additional workload for students as well as educators” (23%), “Limitation of online socialization” (20%), “Difficult to ensure reliability of the service” (17%), etc. Findings revealed that most of the interviewees (60%) said that Web 2.0 was used by all library staff, while 40% of them said that it wasn't used by all library staff. Results also indicated that most of the interview participants (60%) had not received training on use of Web 2.0 tools, while only 40% interviewees had received training on use of Web 2.0 tools. Findings indicated that “Social Networking Tool” and “User Comment” (100%) were the highest used Web 2.0 tools in libraries, while “E-mail Group” and “Blogs & Wikis” with 80%, were the second highest used Web 2.0 tools, followed by “Video Sharing Tool” (60%), “Instant Messenger”, “Image Sharing Tool”, “RSS Feed” and “Book Review” with (40%), as well as “Social Bookmark” (20%). Results indicated that Web 2.0 services were managed into 3 ways including- Web 2.0 services were managed by Library Personnel; Web 2.0 services were managed by specialized person; and Web 2.0 services were systematically managed. Results also showed the feelings of library personnel about the usefulness of Web 2.0 technologies in their libraries' services and “Social Networking Tool”

was in the highest mean score of 6.09, while "User Comment" with the second highest mean score of 5.37, followed by "Email Group" (mean score 5.26), "RSS Feed" (mean score 4.89), "Blogs & Wikis" (mean score 4.51), "Book Review" (mean score 4.46), "Instant Messenger" (mean score 4.37), "Video Sharing Tool" (mean score 4.31), "Social Bookmark" (mean score 4.00), and "Image Sharing Tool" (mean score 3.63). Findings reported the required skills to use Web 2.0 tools were that "Communication Skills" (86%) was in the highest position among all the skills, closely followed by "Information Literacy Skills" (83%), "ICT Skills" (69%), "Collaborative Teamwork" (57.14%), "Research Skills" (29%), "Project Management Skills" (6%), etc. Results showed that most of the interviewees (60%) had taken some initiatives to adopt Web 2.0 tools in his/her library and "Instant Messenger" (40%) was the most frequently chosen for adopting Web 2.0 tools, followed by "Blog & Wikis", "Image Sharing Tool", "Video Sharing Tool", "Social Bookmark", "RSS Feed", "Book Review" with 20 percent, were in the same position, compared to 40% interviewees who had not taken any initiative to adopt Web 2.0 tools. Findings reported that most of the interviewees (69%) indicated that Web 2.0 would create the high workload, the limited quality of interaction, as well as uncertainty about the ownership and assessment issues, compared to 31% interviewees mentioned that it wouldn't make. Results showed that the highest percentage of interview participants (57%) indicated that Web 2.0 was sometimes away from the control of librarians, while 20% of them mentioned that it was never beyond the control of librarians, and 17% of the interviewees stated that it was rarely beyond the control of librarians. The lowest percentage of the participants (6%) revealed that it was always away from the control of librarians. Results also showed that 77% interview participants mentioned that academic IT facilities of their library were sufficient for Web 2.0 technologies, compared to 23% interviewees answered that academic IT facilities were insufficient for it. Results showed that the observations of the interviewees were as follows: Library professionals in academic libraries were not enough trained to adopt Web 2.0 technologies; Sometimes many of them were reluctant to take the initiative to implement this highly applicable technology into this profession. Many academic libraries did not allow using social networking tools. This was a threat to make popular Web 2.0 technology. However, through proper education that might be overcome, etc. The interview participants

made some important comments on Web 2.0; some of them were as follows: Web 2.0 technology was an integral part for an academic library. Because, with the help of using this technology, users or readers could express their opinion about their library website as well as its services; Web 2.0 technologies made the library service more efficient and faster; Web 2.0 tools were very important for marketing the library materials. It also kept students up-to-date about library; Use of Web 2.0 tools was more advantageous for communicating with the users and getting the users feedback; and Web 2.0 technology was easy to use for the administrators without having depth IT knowledge etc. Furthermore, the interviewees suggested that the Web 2.0 services would be improved by implementing the following ways: Web 2.0 technology is not so popular and used to in Bangladesh. For that reason, more steps should be taken for making it popular and easy to use; Academic libraries should use Web 2.0 technologies for ensuring better library services, easy access to resources; Web 2.0 tools and technologies should be used more and more in academic libraries because it makes the tasks faster and less error prove as well as eventually improves service quality; Web 2.0 services should be spread out widely so that the sharing of information is to be good and the LIS professionals of Bangladesh, who have been working in academic libraries, are not skilled enough in using Web 2.0 technology. Therefore, more training and awareness is needed to overcome it.

This chapter concludes that LIS professionals held neither highly positive nor highly negative perceptions about the use of Web 2.0 technologies in libraries, and predicts that Web 2.0 is the second generation of Web-based tools and services that is focused on the ability for people to collaborate and share information online and the usage of Web 2.0 tools and technologies in libraries will increase in future.



## **Chapter-4**

### **Use of Web 2.0: Perceptions of Academics (i.e. faculty members) and Students**

#### **4.1 Introduction**

Web 2.0 is influencing the way in which people learn access information and communicate with one another (Virkus, 2008). In this chapter, the perceptions of academics and students are explored, who use Web 2.0 technologies to accomplish their personal and official work. The rest of this chapter is structured like the previous chapter as follows: The second section discusses the research methods, including the sample, questionnaire design, as well as data collection and analysis. The third section discusses and analyzes the findings of the study; and the fourth section summarizes the findings.

#### **4.2 Research Methods**

The research strategy, employed in this chapter, was accomplished with the interview method to obtain the research objectives. However, total Interviewees were 65 (Sixty-five). Among them, academics were 15 (Fifteen) and students were 50 (Fifty). Data were gathered from the participants of the Ayesha Abed Library (AAL), BRAC University; East-West University Library (EWUL); Independent University, Bangladesh, Library (IUBL); North South University Library (NSUL); and Daffodil International University Library (DIUL). From each university, 3 (Three) academics and 10 (Ten) students were selected, who were using Web 2.0 technology. In the view of students, above 70 (Seventy) participants were requested to give some times for interview. Among them, 50 (Fifty) participants agreed and took part in the interview. Each interview was lasted from 20 to 30 minutes. On the other hand, in the case of academics, those were interviewed who were experienced about using Web 2.0 technology for gathering their observations and knowledge regarding the use of Web 2.0 in private university libraries of Bangladesh. The interviews were conducted using a structured questionnaire.

#### ***4.2.1 Questionnaire Design***

The questionnaire for the interview on “Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Academics (i.e. faculty members) and Students” was designed to collect data about Web 2.0 in private university libraries of Bangladesh that included both open and closed-ended questions and consisted of four major sections. Section 1 contained six questions (1.1-1.6) regarding the concept of Web 2.0, whether this technology was helpful in education or not, whether this technology could improve knowledge sharing and collaboration or not, whether it could be used as instant problem solving tools or not, whether Web 2.0 could improve the interactions among the teachers and students or not, and whether educational requirements such as integrated resources, software, notes and lectures were provided to the students through Web 2.0 would be beneficial for them or not. Section 2 included four questions (2.1-2.4) concerning which Web 2.0 tools interviewees liked most, what were the purposes of using these technologies in library, whether it was more comfortable technology than other technologies or not, and the usage of Web 2.0 tools and technologies based on 7-point Likert scales. Section 3 contained five questions (3.1-3.5) focused on major problems to use Web 2.0 tools, whether these tools could create unpleasant elements or not, whether Web 2.0 could create disruptive interaction or not, the major constraints in these technologies based on a 7-point Likert scale, as well as observations, comments and recommendations regarding the use of Web 2.0 in academic libraries of Bangladesh. Section 4 included the background information of the interviewees. Above all, the design of the questionnaire was finalized after consulting with the academic supervisor.

### ***4.2.2 Data Collection and Analysis***

The interview method was applied with the help of a structured questionnaire to gain knowledge about the usage of academics and students to Web 2.0 technology. However, the data were collected during the period of 5th February, 2013 - 21 April, 2013.

The study was accomplished with the help of both qualitative and quantitative analysis of data. According to Khiwa (2010), "Qualitative analysis involves coding responses to open ended questions and free text comments to identify trends and themes in the perceptions of Interviewees". On the other hand, quantitative analysis involves responses to closed ended questions to explain the distribution frequencies and percentages of responses.

Responses to closed-ended questions in particular on 7-point Likert scales were analyzed using the descriptive analysis techniques of SPSS 16.0, and responses to other closed-ended questions were analyzed using Microsoft office excel. According to Williams (2003) and Trochim (2006), "Descriptive analysis describes the distribution frequencies of responses and analysis involves the examination across cases of one variable at a time". Therefore, responses to the open-ended question were coded to identify the themes within the questionnaire data that relates to the research questions of this study.

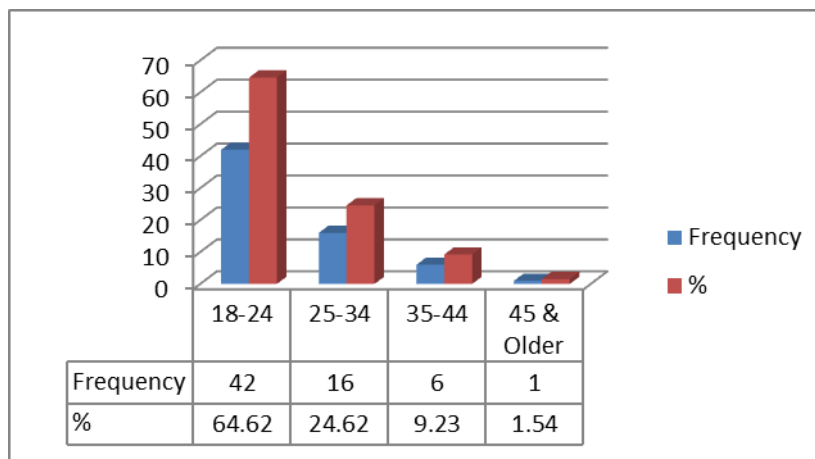
### **4.3 Findings**

The interview results indicated that 65 (Sixty-five) responses were received from academics and students in five private university libraries to identify the use of Web 2.0 technologies by the faculty members as well as students and their perceptions about the potential usage of these technologies in the libraries of Bangladesh. Most of the interviewees of these university libraries were interested about the usage of Social Networking Tool, Email Group, and Blogs & Wikis, while Video Sharing Tool, Image Sharing Tool, Book Review, Instant Messenger, User Comment, Social Bookmark, and RSS Feed were used less. The main purposes of using these technologies of interview participants in libraries were for socializing, working and studying.

### 4.3.1 Demographic Information of the Interviewees

#### 4.3.1.1 Age distribution of the interviewees

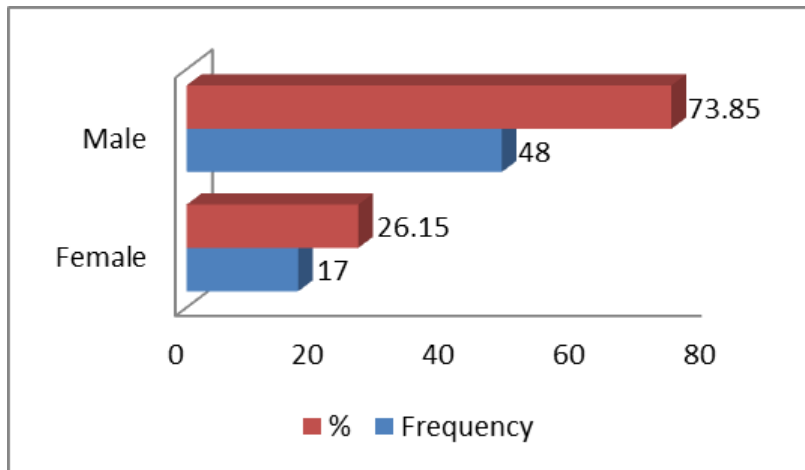
**Figure 4.1** shows that in total 65 interview participants from different types of libraries, a large number 42 (65%) of interviewees is from the age group of 18-24 years, followed by 16 (25%) of interviewees age group of 25-34 years, 6(9%) of interviewees age group of 35-44 years, and 1(2%) interviewee's is aged above 45.



**Figure 4.1: Age distribution of the interviewees**

#### 4.3.1.2 Gender distribution of the interviewees

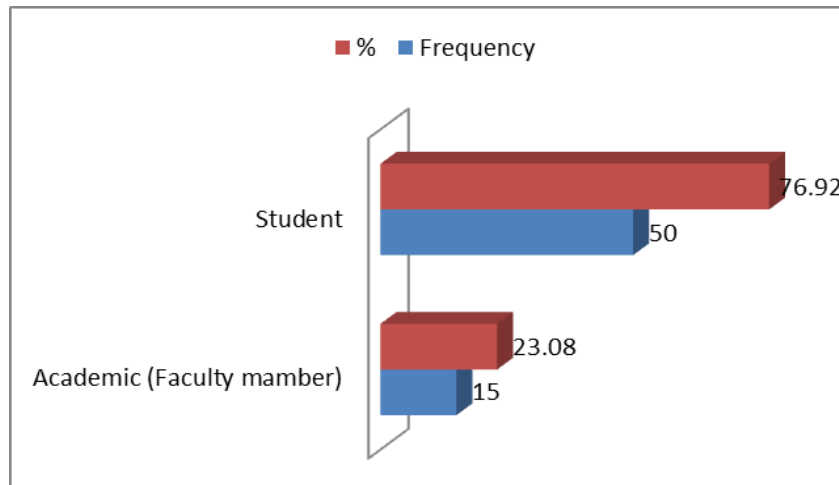
**Figure 4.2** indicates that in total 65 interviewees, majority 48 (74%) of the interview participants are male and only 17 (26%) are female. This suggests a balance between male and female interviewees.



**Figure 4.2: Gender distribution of the interviewees**

#### *4.3.1.3 Distribution of interviewees' working position*

**Figure 4.3** indicates that in total 65 interviewees, 50 (77%) of the interviewees are students and 15 (23%) of them are faculty members.



**Figure 4.3: Distribution of interviewees' working position**

#### *4.3.1.4 Educational qualification of the interviewees*

The responses were received from the interviewees, in accordance with their educational qualification.

**Table 4.1: Educational qualification of the interviewees**

Educational Qualification	Frequency of Interviewees	%
Pre-Graduate	33	50.77
Graduate (B.A./ B.S.S..)	11	16.92
Post Graduate (M.A./M.S./M.B.A)	17	26.15
Doctor of Philosophy (PHD)	3	4.62
Diploma Course	1	1.54
Total	65	100

**Table 4.1** indicates that the percentage of responses respectively come from “Undergraduate” (51%), “Post-Graduate” (26%), “Graduate” (17%), “Doctor of Philosophy” (5%), and “Diploma Course” (1%).

### 4.3.2 Concept of Web 2.0 Tools and Technologies

#### 4.3.2.1 Concept of Web 2.0

The participants were requested to tell the concept of Web 2.0 tools and technologies. The data, received from the participants, was summarized regarding the concept of Web 2.0 technology.

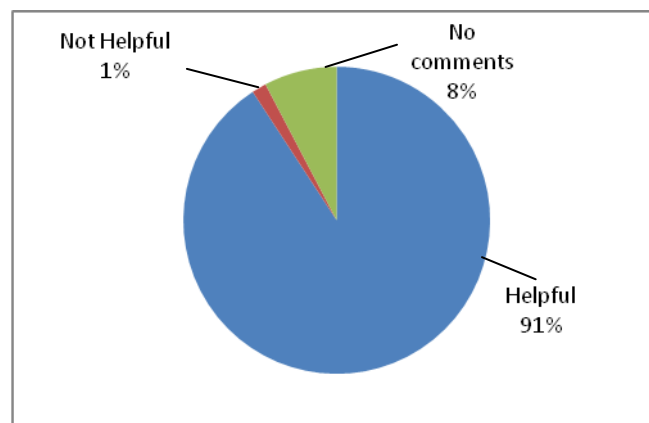
**Table 4.2: Concept of Web 2.0**

Concept of Web 2.0	Total Interviewees	Frequency	Percentage
The development of social networks	65	41	63.08
The second generation of Web-based tools and services that is focused on the ability for people to collaborate and share information online	65	53	81.54
A commentary or news on a particular subject	65	21	32.31
A Website that allows visitors to add, remove and edit content	65	21	32.31
An open and informal method of categorizing that allows users to associate keywords or "tags" with online content	65	19	29.23
Web 2.0 will be a waste of time	65	41	63.08

**Table 4.2** indicates that the highest percentage is 82 percent and concerns to “The second generation of Web-based tools and services that is focused on the ability for people to collaborate and share information online”, while “The development of social networks” and “Web 2.0 tools will be a waste of time”, are in the second highest position with 63 percent, closely followed by “A commentary or news on a particular subject” and “A website that allows visitors to add, remove and edit content” with 32%, are in the same position, as well as “An open and informal method of categorizing that allows users to associate keywords or "tags" with online content” (29%).

#### 4.3.2.2 Usefulness of Web 2.0 in education

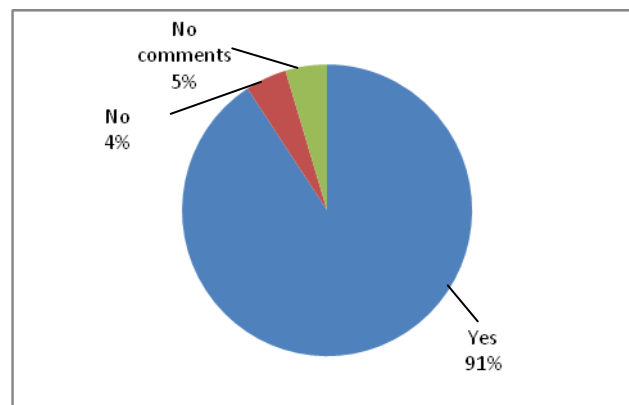
Interview participants were asked whether Web 2.0 technology was helpful in education or not. **Figure 4.4** shows that 59 interviewees (91%) indicate that Web 2.0 is helpful in education, while 1 interviewee (1%) answer that it isn't helpful in education. And 5 (8%) of them have no comments.



**Figure 4.4: Usefulness of Web 2.0 in education**

#### 4.3.2.3 Improving knowledge sharing and collaboration through Web 2.0

Interviewees were asked whether Web 2.0 technology could improve knowledge sharing and collaboration or not. **Figure 4.5** shows that 59 participants (91%) indicate that Web 2.0 technologies can improve knowledge sharing and collaboration, while 3 participants (5%) indicate that it can't improve knowledge sharing and collaboration. And 3 (5%) of them have no comments.

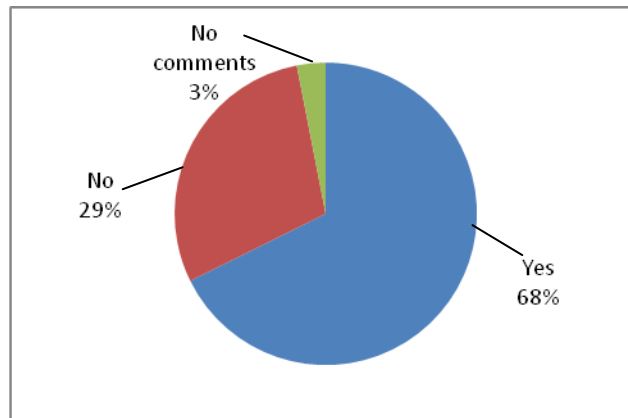


**Figure 4.5: Improving knowledge sharing and collaboration through Web 2.0**

#### 4.3.2.4 Using Web 2.0 as instant problem solving tools

Interview participants were asked whether Web 2.0 could be used as instant problem solving tools or not. It is found that 44 interviewees (68%) say that Web 2.0 technology can be used as instant problem solving tools, while 19 interviewees (29%) say that it can't be used as instant problem solving tools. And 2 interviewees (3%) don't have any comments (see figure 4.6).

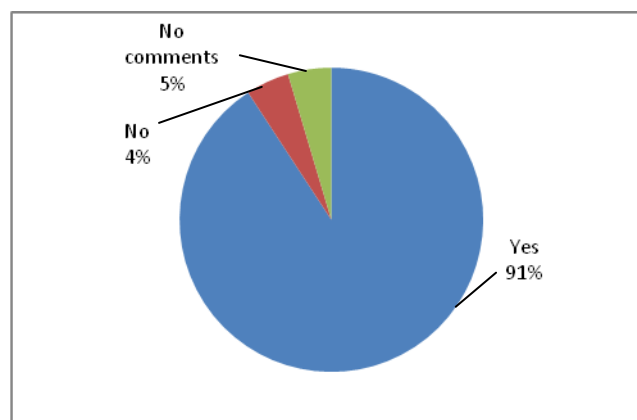




**Figure 4.6: Using Web 2.0 as instant problem solving tools**

#### ***4.3.2.5 Improving interactions through Web 2.0***

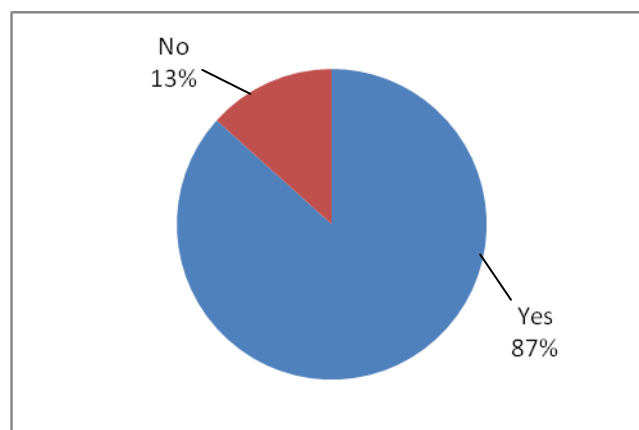
Interviewees were asked whether Web 2.0 technology could improve the interactions among the teachers and students or not. **Figure 4.7** shows that 59 interview participants (91%) indicate that Web 2.0 can improve the interactions among the teachers and students, while 3 interviewees (5%) indicate that it can't improve the interactions among them. And 3 interviewees (5%) don't have any comments.



**Figure 4.7: Improving interactions through Web 2.0**

#### 4.3.2.6 Providing educational requirements to students through Web 2.0

Interviewees of academics were asked whether educational requirements such as integrated resources, software, notes and lectures were provided to the students through Web 2.0 would be beneficial for them or not. **Figure 4.8** indicates that 13 interview participants (87%) say that it will be beneficial for students, while 2 interviewees (13%) don't agree with this.



**Figure 4.8: Providing educational requirements to students through Web 2.0**

### 4.3.3 Usage of Web 2.0 Tools and Technologies

#### 4.3.3.1 Most preferable Web 2.0 tools

The participants were asked which Web 2.0 tools were liked most by him/her. The data, received from the participants, was summarized regarding their most favorable Web 2.0 tools.

**Table 4.3: Most preferable Web 2.0 tools**

Web 2.0 Tools	Total Interviewees	Frequency	Percentage
E-mail Group	65	46	70.77
Instant Messenger (e.g. Meebo, AOL)	65	24	36.92
Blogs & Wikis	65	43	66.15
Image Sharing Tool (e.g. Flickr, Picasa)	65	32	49.23
Video Sharing Tool (e.g. YouTube, Metacafe)	65	38	58.46
Social Networking Tool (e.g. Facebook, Twitter, MySpace, LinkedIn)	65	55	84.62
Social Bookmark	65	20	30.77
RSS Feed	65	20	30.77
Book Review	65	30	46.15
User Comment	65	24	36.92
Others:	65	0	0.00

**Table 4.3** shows that “Social Networking Tool” is in the highest position with 85 percent, while “Email Group” with 71 percent, is in the second highest position, followed by “Blogs & Wikis” (66%), “Video Sharing Tool” (58%), “Image Sharing Tool” (49%), “Book Review” (46%), “Instant Messenger” and “User Comment” (37%) as well as “Social Bookmark” and “RSS Feed” (31%).

#### ***4.3.3.2 The purpose(s) of using Web 2.0 in library***

Interview participants were asked to indicate their purpose (s) of using Web 2.0 tools in library. The data, received from the interview participants, was summarized regarding their purposes of using Web 2.0 tools in library.

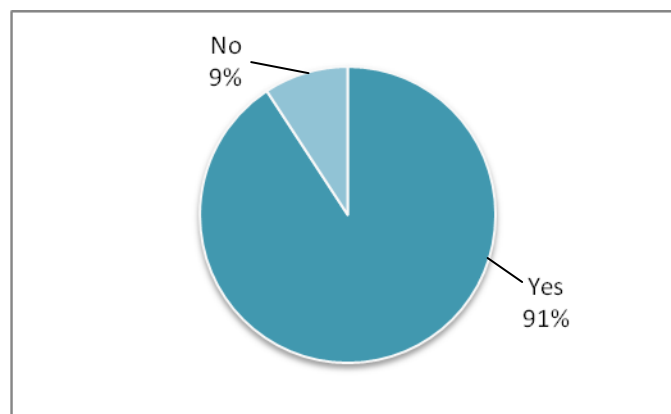
**Table 4.4: The purpose(s) of using Web 2.0 in library**

Web 2.0 Tools	Work	Study	Social/Fun	Work and Study	Social/Fun and Work	Study and Social/Fun	Work, study and fun	Total	Never use
E-mail Group	2 (3.08)	8 (12.31%)	2 (3.08%)	17 (26.15%)	3 (4.62%)	8 (12.31%)	20 (30.77%)	60 (92.31%)	5 (7.69%)
Instant Messenger	1 (1.54%)	2 (3.08%)	13 (20%)	5 (7.69%)	5 (7.69%)	6 (9.23%)	19 (29.23%)	51 (78.46%)	14 (21.54%)
Blogs & Wikis	0	4 (6.15%)	7 (10.77%)	16 (24.62%)	2 (3.08%)	8 (12.31%)	16 (24.62%)	53 (81.54%)	12 (18.46%)
Image Sharing Tool	4 (6.15%)	1 (1.54%)	11 (16.92%)	5 (7.69%)	9 (13.85%)	12 (18.46%)	15 (23.08%)	57 (87.69%)	8 (12.31%)
Video Sharing Tool	3 (4.62%)	3 (4.62%)	16 (24.62%)	3 (4.62%)	7 (10.77%)	6 (9.23%)	11 (16.92%)	49 (75.38%)	16 (24.62%)
Social Bookmark	2 (3.08%)	5 (7.69%)	6 (9.23%)	6 (9.23%)	6 (9.23%)	4 (6.15%)	6 (9.23%)	35 (53.85%)	30 (46.15%)
Social Networking Tool	2 (3.08%)	1 (1.54%)	9 (13.85%)	4 (6.15%)	6 (9.23%)	10 (15.38%)	28 (43.08%)	60 (92.31%)	5 (7.69%)
RSS Feed	2 (3.08%)	7 (10.77%)	6 (9.23%)	10 (15.38%)	0	3 (4.62%)	10 (15.38%)	38 (58.46%)	27 (41.54%)
Book Review	4 (6.15%)	16 (24.62%)	2 (3.08%)	12 (18.46%)	2 (3.08%)	4 (6.15%)	6 (9.23%)	46 (70.77%)	19 (29.23%)
User comment	8 (12.31%)	4 (6.15%)	3 (4.62%)	6 (9.23%)	1 (1.54%)	2 (3.08%)	16 (24.62%)	40 (61.54%)	25 (38.46%)

**Table 4.4** indicates that the maximum number of interview participants tell that they use Web 2.0 to work, study and social/fun purposes, for example: social networking tool 28 (43%), E-mail group 20 (31%), Instant Messenger 19 (29%), blogs & wikis and user comment 16 (25%), as well as Image sharing tool 15 (23%). 16 (25%) interviewees use other tools, such as- Book Review mostly to study. The few participants who use video sharing tool 11(17%), RSS Feed 10(15%), and Bookmarking tool 6(9%) mostly to work, study and Fun. The percentages are based on the numbers of those who indicate that they use the tools.

#### 4.3.3.3 Web 2.0 as a comfortable technology

Interviewees were asked whether Web 2.0 was comfortable technology than other technologies or not. **Figure 4.9** shows that 59 interview participants (91%) indicate that Web 2.0 technology is more comfortable technology than other technologies, while 6 interviewees (9%) don't give their consent with this.



**Figure 4.9: Web 2.0 as a comfortable technology**

#### 4.3.3.4 Level of agreement on usage of Web 2.0 technology

The interview participants were asked to indicate their level of agreement with the use of Web 2.0 tools in libraries for exchanging knowledge. The responses received from them were measured on 7-point Likert scales in **Table 4.5**, and mean and standard deviation of the responses were calculated according to the following scores: strongly disagree=1.00, disagree somewhat=2.00, disagree=3.00, neutral=4.00, agree=5.00, agree somewhat=6.00, strongly agree=7.00 using the descriptive analysis techniques of SPSS 16.0.

**Table 4.5: Level of agreement on usage of Web 2.0 technology**

Statement	N	Min.	Max.	Mean	Std. Deviation
To increase my confidence in working in the library	65	1.00	7.00	4.58	1.52
To help me creating new friendship	65	1.00	7.00	5.11	1.61
To provide information literacy instruction	65	1.00	7.00	5.02	1.40
For searching the library catalogue	65	1.00	7.00	4.91	1.53
To help in knowledge sharing with others	65	1.00	7.00	5.15	1.43
To inform users about new books, databases & journals	65	1.00	7.00	5.06	1.53
To publish library news and events	65	2.00	7.00	5.06	1.26
To increase the quality of group work	65	2.00	7.00	5.12	1.33
To increase the quality of individual work	65	1.00	7.00	4.6	1.65
Web 2.0 will be a cause of information overload	65	1.00	7.00	4.11	1.77
I think implementing Web 2.0 will be a waste of time	65	1.00	7.00	2.95	1.98
Valid N (listwise)	65				

***Increase confidence in working in the library***

This study confirms that Web 2.0 technology increases users' confidence in working in the library. The interviewees agree with the statement (with a mean score of 4.58) that users' confidence is improved in working in the library through the use of Web 2.0 (**See table 4.5**).

***Help creating new friendship***

Social networking sites are a way to get and stay in touch with friends, family and associates who are spread out across the world (Mahmood and Richardson, 2011). The interview participants agree with the statement (with a mean score of 5.11) that Web 2.0 technology assists creating new friendship among different libraries that are using social networking sites.

***Provide information literacy instruction***

Achterman (2006) analyzes the usage and benefits of wikis in the library as a tool to improve information literacy. This study has also found that the interviewees also agree with the statement (with a mean score of 5.02) that information literacy instruction is provided by Web 2.0 technologies in libraries.

***Help searching the library catalogue***

Khiwa (2010) indicates that the statement is relating to the use of bookmarking tools, and it shows the interviewees may not be aware of the uses of bookmarking tools, because they have indicated earlier that they do not use them. But, in this study, the interview participants say that they have been aware of the uses of book marking tools and also report (with a mean score of 4.91) that it helps clients for searching the library catalogue.

***Help knowledge sharing***

Web 2.0 is a new generation of the web that enables users to participate in processes of creating, exchanging and sharing information (Anderson, 2007; Birdsall, 2007; Breeding 2006; Macaskill and Owen 2006; Miller, 2005; O'Reilly, 2005, Yang, 2010, Khiwa, 2010.). It is strongly agreed by the participants (with the highest mean score of 5.15) that Web 2.0 technologies help in knowledge sharing with others.

***Inform users about library materials***

Khiwa (2010) finds that more than half of the interviewees 36 (53%) agree with statement that Web 2.0 tools can be used to inform users about new books, databases and journals. The statement is referring more specifically to RSS feeds and Blogs. This study has also found that the participants agree with the statement (with a mean score of 5.06) that Web 2.0 informs users about new books, databases and journals or any kind of library materials.

***Publish library news and events***

Clyde's (2004) analyzes the content of 55 library blogs from the USA, Canada and the UK. Among them, 21 belong to academic libraries. It is found that most of the blogs are made to provide news or information for library users, while, Mahmood and Richardson (2011) find that most of the academic libraries are using RSS technology to publish library news and announcements. The interview participants also agree with the statement (with a mean score of 5.06) that Web 2.0 technology publishes library news and events.

***Increase the quality of group work***

Web 2.0 is part of the vision of World Wide Web; of a tool which creates and gathers knowledge through human interaction and collaboration. Web 2.0 refers to a change in the way the internet is used, which facilitates its innovative collaborative nature (Isaias, Miranda and Pifano, 2008). The interviewees agree to the statement (with the second highest mean score of 5.12) that Web 2.0 technologies are helping to increase the quality of group work.

***Increase the quality of individual work***

Web 2.0 is a range of increasingly popular web services that offer users a dynamic interactive communication platform combined with the ability to create change and publish content (Anderson, 2007; Breeding, 2006; Macaskill and Owen, 2006; Secker, 2008). The Interviewees agree with a mean score of 4.6, that the quality of individual work can be increased through the use of Web 2.0 technology.

***Web 2.0 will be a cause of information overload***

Using the RSS tool of Web 2.0, multiple information sources are aggregated into one page so that users can scan information and select articles of interest for more detail, alleviating information overload (Kim and Abbas, 2010). The interview participants agree with the statement (with a mean score of 4.11) that sometimes the use of Web 2.0 will be a cause of information overload.



***Web 2.0 will be a waste of time***

The interview participants agree with the statement (with the lowest mean score of 2.95) that sometimes, implementing Web 2.0 technology will be a waste of time.

#### **4.3.4 Problems Faced by Academic Libraries in Using Web 2.0 Technologies and Recommendations to Overcome the Problems**

##### ***4.3.4.1 Problems to use Web 2.0***

The participating interviewees were requested to identify the major problems to use Web 2.0 technologies in their libraries. The data, received from the participants, was summarized regarding the problems to use Web 2.0.

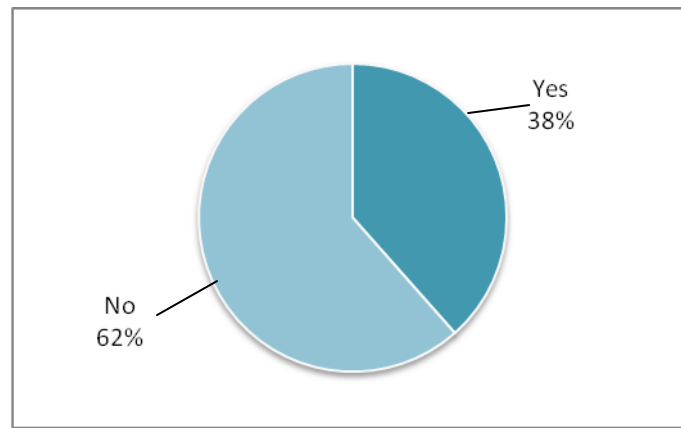
**Table 4.6: Problems to use Web 2.0**

<b>Problems</b>	<b>Total Interviewees</b>	<b>Frequency</b>	<b>Percentage</b>
Lack of ICT skills	65	35	53.85
Lack of Research Skills	65	30	46.15
Lack of Project Management Skills	65	22	33.85
Lack of Communication Skills	65	29	44.62
Lack of Collaborative Teamwork	65	23	35.38
Others: lack of resources, lack of user experience based interface design	65	3	4.62

**Table 4.6** indicates that the statement “Lack of ICT skills” is in the highest position with 54 percent, while the statement “Lack of Research Skills” with 46 percent, is in the second highest position, closely followed by the statements “Lack of Communication Skills” (45%), “Lack of Collaborative Teamwork” (35%), “Lack of Project Management Skills” (34%), etc.

#### 4.3.4.2 *Creating unpleasant elements through Web 2.0*

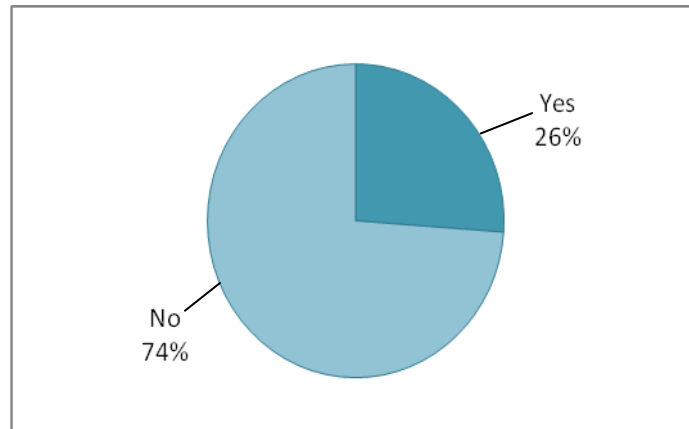
Interview participants were asked whether Web 2.0 might be open to unpleasant elements or not. **Figure 4.10** shows that 25 interviewees (38%) indicate that Web 2.0 tools may create unpleasant elements that can damage social websites in many ways, while 40 interviewees (62%) don't agree with this.



**Figure 4.10: Creating unpleasant elements through Web 2.0**

#### 4.3.4.3 *Creating disruptive interaction through Web 2.0*

Interviewees were asked whether Web 2.0 could create disruptive interaction among students or not. **Figure 4.11** shows that 17 participants (26%) indicate that Web 2.0 tools can create disorderly interaction among students, while 48 (74%) of them indicate that it can't create disturbing interaction.



**Figure 4.11: Creating disruptive interaction through Web 2.0**

#### *4.3.4.4 Level of agreement with the obstacles in the case of using Web 2.0*

The interview participants were asked to indicate their level of agreement with the obstacles in the case of using Web 2.0 technology. The responses received from them were measured on 7-point Likert scales in **Table 4.7**, and mean and standard deviation of the responses were calculated according to the following scores: strongly disagree=1.00, disagree somewhat=2.00, disagree=3.00, neutral=4.00, agree=5.00, agree somewhat=6.00, strongly agree=7.00 using the descriptive analysis techniques of SPSS 16.0.

**Table 4.7: Level of agreement with the obstacles in the case of using Web 2.0**

<b>Obstacles of Using Web 2.0</b>	<b>N</b>	<b>Min.</b>	<b>Max.</b>	<b>Mean</b>	<b>Std. Deviation</b>
Time (A)	65	1.00	7.00	4.03	1.65
Staff Training (B)	65	2.00	7.00	4.57	1.46
Privacy (C)	65	1.00	7.00	4.28	1.84
Institutional Policies (D)	65	2.00	7.00	4.49	1.34
Technological Barriers (E)	65	1.00	7.00	4.82	1.94
Valid N (listwise)	65				

**Table 4.7** reveals that the highest mean score is 4.82 for statement (E), while the lowest mean score is 4.03 for statement (A). The second highest mean score is 4.57 for statement (B), conversely, the second and third lowest mean score are 4.28 and 4.49 for statements respectively (C) and (D).

#### *4.3.4.5 Observations, comments and recommendations regarding the use of Web 2.0 in academic libraries*

At the end of the interview, the interview participants were asked to fill in their observations, comments and recommendations regarding the use of Web 2.0 tools in academic libraries. Interviewees expressed some constructive imminent on this issue. Their responses were categorized under the headings included the following:

##### *4.3.4.5.1 Observations*

Tripathi (2009), covering 277 universities' libraries from Canada, United States of America (USA), United Kingdom (UK) and Australia, discovers that out of 277 universities' libraries, 211 (76.17%) have adopted some or the other Web 2.0 tools, whereas 66 of university libraries or 23.83% don't not use any Web 2.0 tools. Most of the Web 2.0 tools are implemented by the IM (53%), Blogs (46.6%), and RSS (39.3%) of the 211 libraries. Podcasts and SNS are least implemented. In addition, P14 stated that Web 2.0 technology would be more effective and dedicated platform for increasing the library service overall in Bangladesh. If it would be effective in libraries, the education system might be changed. Another interviewee participant confidently mentioned that no doubt these tools and technologies were very helpful to interact between readers or users and librarians (P23). P25 and P31 reported that with the help of Web 2.0 technologies, he/she could share his/her opinion and also could get feedback from library users, whereas, P38 mentioned that Web 2.0 technology was helpful to share information and get instant message. P26 thought that Web 2.0 technology would create an opportunity for new members to

understand the purpose thoroughly and usage of such tools and technologies in academic libraries. However, it worked as a helping hand when working in the library.

Some interviewees made observation somewhat negatively who were: P34 stated that many people didn't use Web 2.0 technology. Because they weren't interested about this. So, the awareness of using Web 2.0 technology should be increased. P4 reported that they faced video/audio file downloading problem. Sometimes they needed to download important video/audio file, but he/she couldn't access the related site. Other university libraries provided the video/audio file downloading facilities for students, but their libraries didn't provide the facilities. Similarly, one interviewee told that "Though it helps us but it makes problems. Sometimes, we can't find our desirable book. The specification of books should be increased" (P18). P13 reported that it was seen that some students misused resources by using social networking site which might be important for other students. In this case, user's ethics played an important role.

#### ***4.3.4.5.2 Comments***

Anderson (2007) believes, "Web 2.0 is a series of powerful ideas that are changing the way some people communicate". Miller quotes that "Web 2.0 is an attitude not a technology" (Miller, 2005), while Birdsall (2007) asserts that "Web 2.0 is a social movement". In this regard, the interviewees made some important comments on Web 2.0 technology; some of them were as follows: P8 thought that it was a better way to communicate with others. It had better effects in our national trade and helped us to develop our knowledge. Another interviewee expressed that Web 2.0 technology was very essential and helpful for student. It would be easier to him/her for using library and having all the facilities as well as for gathering knowledge from different libraries. Definitely it was not a waste of time. It should be activated (P9). Similarly, P10 stated that Web 2.0 was very useful to develop and widen knowledge as it made technologies easier to gather information and knowledge, whereas P19 mentioned that Web 2.0 technology was helpful for students. They could collect news and necessary data by using the technology. But, firstly, it was needed that Web 2.0

technology should be known for students. If they knew more about the technologies and proper use of it, Web 2.0 technology might be effective for them. One interviewee reported that Web 2.0 technologies helped him/her to learn about information literacy and other library services (P2). Another interviewee said that he/she had used Web 2.0 technologies but he/she didn't have enough knowledge about it (P5).

#### ***4.3.4.5.3 Recommendations***

Ata-ur-Rehman and Shafique (2011) state that national, academic and special libraries should include Web 2.0 components on their websites. In addition, P6 reports that Web 2.0 technology will lessen our time. It will introduce us with a new world. She thinks that authority should take necessary steps to advertise it that's way all people will be familiar with the technology, while P1 mentions that a policy should be developed for the effectiveness and proper use of these tools. Another interviewee expresses that regarding Web 2.0 technologies in academic libraries, there should be an account for any member such as—g-mail, yahoo, facebook account so that every student has an easy access for opening their profile (P16). Similarly, P28 suggests that Web 2.0 tools and technologies in academic libraries should be available for students. P39 states that in academic libraries, Web 2.0 technologies should be adopted more, as well as teachers and students should be used more these technologies. One interviewee reports that their library is using Web 2.0 tools. Other libraries should take initiatives to increase the uses of these tools and technologies (P40).

#### 4.4 Summary

The main goal of this chapter was to explore the perceptions of academics and students regarding Web 2.0 technology usage and application in private university libraries of Bangladesh. Findings explored the concept of Web 2.0 from the interviewees. In the questions, highest percentage was 82 percent and indicated that Web 2.0 was—“The second generation of Web-based tools and services that is focused on the ability for people to collaborate and share information online”, while “The development of social networks” and “Web 2.0 will be a waste of time”, were in the second highest position with 63 percent, followed by “A commentary or news on a particular subject” and “A Website that allows visitors to add, remove and edit content” (32%), as well as “An open and informal method of categorizing that allows users to associate keywords or "tags" with online content” (29%). Results discovered that a large amount of participants (91%) indicated that Web 2.0 technology was helpful in education, while only 1% of them indicated that it wasn't helpful in education. And 8% of the interviewees had no comments. Findings revealed that the majority of interview participants (91%) indicated that Web 2.0 could improve knowledge sharing and collaboration, while 4% of the interviewees don't agree with this. And 5 % of them had no comments. Findings also revealed that 68% of the interviewees were reported that Web 2.0 could be used as instant problem solving tools, while 29% of them were reported that it couldn't be used as instant problem solving tools. And 3% of the interviewees didn't have any comments. Results also exposed that the most of the participants (91%) indicated that Web 2.0 could improve the interactions among the teachers and students, while 5% of the interviewees indicated that it couldn't improve the interactions among them. And 4% of the interviewees didn't have any comments. Only interviewees of academics were asked whether educational requirements such as integrated resources, software, notes and lectures were provided to the students through Web 2.0 would be beneficial for them or not and results indicated that 13 interview participants (87%) said that it will be beneficial for students, while 2 interviewees (13%) didn't agree with this. Findings indicated that “Social Networking Tool” (85%) was the highest usable Web 2.0 tool, while “Email Group” with 71 percent, was the second highest preferable Web 2.0 tool, followed by “Blogs & Wikis” (66%), “Video Sharing Tool” (e.g.

YouTube, Metacafe)" (58%), "Image Sharing Tool" (49%), "Book Review" (46%), "Instant Messenger" and "User Comment" (37%), "Social Bookmark and RSS Feed" (31%), etc. Results also showed that Web 2.0 technologies could be used to- "Help knowledge sharing" with the highest mean score of 5.15, followed by "Increase the quality of group work" (mean score 5.12), "Help creating new friendship" (mean score 5.11), "Inform users about library materials" and "Publish library news and events" (mean score 5.06), "Provide information literacy instruction" (mean score 5.02), "Help searching the library catalogue" (mean score 4.91), "Increase the quality of individual work" (mean score 4.6), "Increase confidence in working in the library" (mean score 4.58), "Web 2.0 will be a cause of information overload" (mean score 4.11), as well as "Web 2.0 will be a waste of time" (mean score 2.95). Findings revealed that the majority of the interviewees (91%) indicated that Web 2.0 was more comfortable technology than other technologies, while 9% of them indicated that it wasn't comfortable technology for them. Interviewees reported that the major problems to use Web 2.0 in libraries and results revealed that the statement "Lack of ICT skills" was in the highest position with 54 percent, while "Lack of Research Skills" with 46 percent, was in the second highest position, closely followed by "Lack of Communication Skills" (45%), "Lack of Collaborative Teamwork" (35%), "Lack of Project Management Skills" (34%), etc. Findings showed that 38% of the participants indicated that Web 2.0 could create unpleasant elements that could damage social websites in many ways, whereas 62% of the interviewees indicated that it couldn't create unpleasant elements. Findings showed that 26% of the interview participants indicated that Web 2.0 could create disruptive interaction among students, compared to 74% of them indicated that it couldn't create disturbing interaction. Results revealed that the positive observations of the interviewees were: Web 2.0 technology should be more effective and dedicated platform for increasing the library service overall in Bangladesh. If it would be effective in libraries, the education system might be changed; No doubt that these tools and technologies were very helpful to interact between readers or users and librarians; Web 2.0 technology was helpful to share information and get instant message; Web 2.0 technology would create an opportunity for new members to thoroughly understand the purpose and usage of such tools and technologies in academic libraries. However, it worked as a helping hand when working in



the library. Results also showed that the negative observations of the Interviewees were: Many people didn't use Web 2.0 technology. Because, they weren't interested about this. So, the awareness of using Web 2.0 should be increased; Though it helped us but sometimes, it made problems. Sometimes, students couldn't find their desirable book. The specification of books should be increased; and some students misused resources by using social networking site which might be important for other students. In this case, user's ethics played an important role. The interviewees made some important comments on Web 2.0 technology; some of them were as follows: It was a better way to communicate with others. It had better effects in our national trade and helped us to develop our knowledge; Web 2.0 technology was very essential and helpful for student. It would be easier to him/her for using library and having all the facilities as well as for gathering knowledge from different libraries. Definitely it was not a waste of time. It should be activated; Web 2.0 was very useful to develop and widen knowledge as it made technologies easier to gather information and knowledge; Web 2.0 technology was helpful for students. They could collect news and necessary data by using the technology. But, firstly, it was needed that Web 2.0 technology should be known for students. If they knew more about the technologies and proper use of it, Web 2.0 technology might be effective for them, etc. The Interviewees suggested that the Web 2.0 services would be improved by implementing the following processes: Web 2.0 technology will lessen our time. It will introduce us with a new world. Authority should take necessary steps to advertise it that's way all people will be familiar with the technology; A policy should be developed for the effectiveness and proper use of this tools; Web 2.0 tools and technologies in academic libraries should be available for students; In academic libraries, Web 2.0 technologies should be adopted more as well as teachers and students should be used more these technologies, etc.

This chapter concludes that academics and students held neither highly positive nor highly negative perceptions regarding the use of Web 2.0 technologies in libraries, and predicts that Web 2.0 is a website that allows patrons to add, remove and edit content as well as permits patrons to share content with others.

## Chapter 5

### Use of Web 2.0: A SWOT Analysis

#### 5.1 Introduction

A SWOT analysis is simply a series of questions asked about one's business to assist in determining the business's Strengths, Weaknesses, Opportunities and Threats. One can be assured that all of these elements are relevant to his/her business in the Web 2.0 technology realm. It only makes sense to use SWOT analysis within the Web 2.0 technologies to determine the Strengths, Weaknesses, Opportunities and Threats the business has, or will encounter upon implementation of a Web 2.0 technology. Without a SWOT analysis it will be impossible to develop an effective Web 2.0 technology Marketing Strategic Plan, develop company guidelines and effectively initiate the Web 2.0 technology.

In a somewhat similar manner, a SWOT analysis of social media (e.g. Web 2.0) in libraries will give libraries the opportunity to use such media (e.g. such technology) to develop a dynamic relationship between themselves and their users; they have the potential to produce more user-centered libraries that are constantly evolving to maintain their relevancy as they compete with other online resources. The analysis will also allow librarians to recognize the opportunities that are out there that they can take advantage of, make them aware of the threats they may face when they get into the Web 2.0 realm, and help them respond accordingly (Fernandez, 2009).

However, the rest of this chapter is organized as follows: Section 5.2 explores data collection and analysis; Section 5.3 describes the strengths; Section 5.4 explains the weaknesses; Section 5.5 discusses the opportunities; Section 5.6 elucidates the threats; Section 5.7 summarizes the SWOT analysis at a glance; and Section 5.8 concludes the chapter.

## **5.2 Data Collection and Analysis**

Schroeder, Minocha and Schneidert (2010) state that when using a SWOT framework one needs to clearly identify the unit of analysis and its boundaries because the categories strengths and weaknesses describe the internal characteristics, while the categories opportunities and threats describe the external characteristics of the situation under analysis. Therefore, the results of this study are demonstrated using a SWOT analysis (See Table 5.1) based on the findings of Chapter 3 and 4.

## **5.3 Strengths of Web 2.0 Technology**

The strengths have been used to mean the merits or advantages of using Web 2.0 technologies in the libraries. Findings of this study have shown the following strengths of using Web 2.0 technologies in the private university libraries of Bangladesh:

### ***5.3.1 Increase importance of the library to the user***

Patrons can leave feedback for libraries and can make suggestions to improve services in a setting that is comfortable for the patron (Farkas, 2007). It has found in this study that Web 2.0 technologies allow libraries to reach out to patrons.

### ***5.3.2 Improve the library images***

A library can post images of books for discussion groups, news about the library, and pictures and videos of the library and library events through Web 2.0 technology (Dickson, Adrion and Hanson, 2008). It has also found in this study that Web 2.0 technologies are improving the image of library.

### ***5.3.3 Improve communication***

Web 2.0 technologies can be used to connect with patrons and other librarians (Breeding, 2007). Findings of this study reveal that Web 2.0 improves communication of the libraries with users and improves communication among librarians.

### ***5.3.4 Enhance interactions***

Web 2.0 tools and services can support much flexibility in the learning processes and allow for easy publication, sharing of ideas and re-use of study content, commentaries, and links to relevant resources in information environments that are managed by the teachers and learners themselves (Guntram, 2007). Students and teachers use many web-based systems in order to exchange information and enrich their knowledge (Dickson, Adrion and Hanson, 2008). Results of this study indicate that Web 2.0 technologies are a good way to create interactions among teachers and students.

### ***5.3.5 Build community spirit***

By accessing each other's blogs and social networking profiles, students are able to overcome relational barriers, which in turn contributed to the development of a community spirit among the students (Schroeder, Minocha and Schneidert, 2010). Findings of this study confirm that Web 2.0 tools assist to build community spirit among students widely.

### ***5.3.6 Overcome remoteness and geographical distance***

Web 2.0 technologies allow libraries to reach a wide range of library users because they are very common Web 2.0 tools (Fernandez, 2009). Scottish Library and Information Council (SLIC) and Chartered Institute of Library and Information Professionals in Scotland (CILIPS, n.d), state that Web 2.0 tools allow libraries to help and to serve their users more efficiently and to reach a new audience in the virtual sphere. It has found in this study that Web 2.0 technologies overcome remoteness and geographical distance.

### ***5.3.7 Share library news and events***

Web 2.0 technologies allow patrons to stay updated on library events and to plan events they wish to attend without having to physically go to the library (Dickson, Adrion and Hanson, 2008). It reveals that Web 2.0 tools help in advertising and promoting the events and services of library.

### ***5.3.8 Enhance knowledge***

Blog entries are cross-linked with an interrelated network of communities, where information ideas are consistently shared, republished, aggregated, linked to, and discussed (Murley, 2008). This study confirms that as patrons share their opinions, thoughts and beliefs through blogs as well as all comments are visible to all, making it easier to enhance ideas and knowledge with all team members.

### ***5.3.9 Better understanding of students' needs***

The use of Web 2.0 technology helps to better understand the students' needs as the applications allows observing the interactions among the students and their particular areas of contributions (Schroeder, Minocha and Schneidert, 2010). Findings of this result have also indicated that Web 2.0 technologies facilitate to understand the students' needs well.

### ***5.3.10 Comfortable technology***

It has found in this study that since the images, videos, events or any type of document of library can share and post through Web 2.0 technologies, so it can be said that Web 2.0 is comfortable technology than other technologies.

### ***5.3.11 Collaborate and share information online***

Web 2.0 technologies allow library users to find information about the library in an interface with which they are already familiar (Landis, 2010). Wiki is a website on which several authors can collaborate to share information (Macaskill and Owen, 2006). Findings of this study confirm that Web 2.0 technologies focus on the ability for clients to collaborate and share information online.

### ***5.3.12 Allow visitors to customize content***

Web 2.0 refers to a group of technologies such as blogs, wikis, RSS feeds, podcasts, etc, where users are able to add, share and edit the content, creating a socially networked web environment (Anderson, 2007). It indicates that Web 2.0 technologies allow visitors to customize content at well.

### ***5.3.13 Instant problem solving skill***

Instant Messenger (IM) offers real-time conversation using text messages and it usually requires software to be installed to both parties' computers (Khiwa, 2010). It has also found in this study that IM is such kind of service by which the users can inform their demands to the librarians and instantly the librarians take initiatives to fulfill their demands.

### ***5.3.14 Promote library service***

Web 2.0 technology allows libraries to interact with patrons through discussion boards and walls, image tagging, and comments. Ultimately, Web 2.0 technologies allow libraries to promote their services in a different venue (Dickson, Adrion and Hanson, 2008). Results of this study have also shown that Web 2.0 tools provide students the educational requirements such as software, notes and lectures, which are beneficial for them.

## **5.4 Weaknesses of Web 2.0 Technology**

The weaknesses have been exploited to denote the limitations or disadvantages of using Web 2.0 technologies in the libraries. However, findings of this study have indicated the following weaknesses of using Web 2.0 technologies in the libraries of Bangladesh:

### ***5.4.1 Decrease socialization***

Results of this study have indicated that the main limitation of Web 2.0 is that it diminishes face-to-face socialization among individuals. Because of misuse of the independence, individuals are free to create a dream persona and can play to be someone else. It is hard to say no, be rude, or ignore someone when one's are looking them in the eye. It's exceedingly easy and quick to unfriendly someone or simply block their efforts to make a connection. In the case of E-mail groups, there are lacks of verbal communication not helping on the pronunciation of words and there is no social contact.

### ***5.4.2 Time constraint***

It has found that using Web 2.0 can be a big waste of time. Although, it is true that most of the clients likely spend in making and maintaining important educational work, social or professional connections through Web 2.0 technologies, at the same time, it has some demerits, such as- spending valuable time on games, chats or other non-related activities, etc.

### ***5.4.3 Limitations in the quality of interactions***

Web 2.0 technology reveals constraints related to communication, whereas a 'real world' environment provides a large number of cues to judge if a particular form of interaction is appropriate, the provision of these cues in an online environment is very limited (Dennis and Kinney, 1998). It has found in this study that all students have not the same level of experience in the use of Web 2.0 applications in libraries. Particularly, students are concerned with the poor level of interaction on their library service such as- Book Review and RSS Feed.



### ***Uncertainty about ownership and assessment issues***

In the case of blogs, which are largely maintained by individuals, the true value is derived from the comments of visitors or readers and the hyperlinks with other blogs (Kumar *et al.* 2004). Results of this study confirm that blogs have mixed feelings. Although, it is true that it provides information on a daily basis, but it is also true that in most of the cases it provides wrong information. The nature of blog will allow fellow students to 'hide' behind the contribution of others.

### ***5.4.4 Selective or disruptive interaction***

Results of this study have also shown that as, with a wiki, any user can edit the site content, including other users' contributions as well, there is a possibility of creating any disturbing elements; which is not necessary for others. That's why the relationship between client and library is hindered. Most of the time, wiki provides wrong information and creates knowledge limitation.

## **5.5 Opportunities of Web 2.0 Technology**

The opportunities have been exploited to denote the prospects or visions of using Web 2.0 technologies in the libraries. Results of this study have found the following opportunities of using Web 2.0 in the libraries of Bangladesh:

### ***5.5.1 Opportunities for librarians to market their services***

The 2007 Association of College and Research Libraries (ACRL) Environmental Scan urges librarians to facilitate new approaches to library services by continually assessing the impact that the proliferation of Web 2.0 has on users' perceptions of the library, including the use of social networking sites, wikis, blogs, RSS feeds, and recommendation systems (Association of College and Research Libraries, 2007). The use of Web 2.0 in library websites can provide cost effective marketing opportunities and invaluable public relations for the library service. This is possibly made by the fact that information about library services can be updated quickly and published instantly (SLIC and CILIPS, n.d). It has found in this study that Web 2.0 technologies create opportunities for librarians to market their services and collections to their clientele.

### ***5.5.2 Enable libraries to reach a wide range of their users***

Librarians are reaching a huge audience of online users who are considered Digital Natives as well as those who are deemed to be Digital Immigrants (Fernandez, 2009). It has confirmed in this study that Web 2.0 technologies facilitate libraries to reach a wide range of their users in the shortest time and to attract new users.

### ***5.5.3 Provide students the educational requirements***

Web lectures become an increasingly important device for universities in the educational process (Ketterl, Mertens and Vornberger, 2009). It has found in this study that Web 2.0 tools provide students the educational requirements, such as- software, notes and lectures, which are beneficial for them.

### ***5.5.4 Increase confidence***

Findings of this study have also indicated that at present, patrons can get their necessary information through Web 2.0 technologies (e.g. blogs & wikis, RSS Feed, etc.). Such technologies increase confidence among librarians and users, working in the libraries. It's a good opportunity for them.

### ***5.5.5 Help creating new friendship***

Web 2.0 applications are based on the web (previous generation of web or Web 1.0) to create a new communication environment (O'Reilly, 2005). It has also found that Web 2.0 helps to create new friends.

### ***5.5.6 Provide information literacy instruction***

Information Literacy is the set of skills needed to find, retrieve, analyze, and use information<sup>5</sup>. It has confirmed in this study that libraries provide information literacy instruction to patrons through Web 2.0 technologies.

### ***5.5.7 Help searching the library catalogue***

Xu et al. (2009), believes that Web 2.0 tools can enable greater efficiency and collaboration, they offer improved section management communication, and also improve accessibility and integration of cataloguing resources for cataloguing departments. It has found in this study that Web 2.0 technologies assist the patrons for searching the library catalogue.

### ***5.5.8 Improve knowledge sharing and collaboration***

Web 2.0 is about the more human aspects of interactivity which includes collaborations, networking, personalization, and individualism (Abram, 2006). Most of the academic libraries are using Web 2.0 technologies to publish library news and announcements and sharing items published on library blogs (Mahmood and Richardson, 2011). Findings of this study indicate that users share their knowledge/experience with others through these technologies. As a result, intimacy is growing up from one library to another library.

### ***5.5.9 Inform users about library documents***

Results of this study show that if any new books, journals and databases have come in library, the library authority informs users about the documents through their Web 2.0 technologies (e.g. RSS Feed).

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<sup>5</sup> <http://www.ala.org/acrl/issues/infolit/overview/intro>

### ***5.5.10 Increase the quality of group work***

Web 2.0 tools and services foster new modes of connectivity, communication, collaboration, sharing of information, content development and social organization (Virkus, 2008). It shows in this study that the quality of group work is increasing through the use of Web 2.0.

### ***5.5.11 Provide reference service***

Throughout the use of Social media (e.g. Web 2.0), libraries have the opportunity to hear from their users about the kind of services they want (Fernandez, 2009). It has revealed in this study that libraries provide reference and information services to distant users through Web 2.0 technologies (e.g. Instant Messenger).

Findings of this study has shown that a large number of interviewees use Web 2.0 tools to study, work and for social purposes. Few interviewees utilize these tools only for social/fun. It's a great opportunity of using Web 2.0 technology in libraries of Bangladesh.

## **5.6 Threats of Web 2.0 Technology**

The following threats of using Web 2.0 technologies in the libraries of Bangladesh have found in this study:

### ***5.6.1 Lack of security and privacy***

"Pranksters can post inappropriate comments that might slip through your filters. The providers can make arbitrary changes to your websites to suit their marketing agenda" (Fernandez, 2009). It has also found in this study that, as the possibility of restriction is low to use the website of library, anybody can post irrelevant information through Web 2.0. The low level of data protection creates the risk of leaking confidential information and data immensely.

### ***5.6.2 Difficult to ensure reliability of the service***

It has also found in this study that since anybody can post information to the website of library through Web 2.0, it can be a cause of information overload. That's why, users can't clearly identify whether the information is important to him/her or not. As a result, most of the time users get the service unreliable.

### ***5.6.3 Damage social websites***

Web 2.0 technology may be open to unsavory elements that can sabotage social websites in many ways (Fernandez, 2009). It has shown that Web 2.0 creates unpleasant elements that can spoil social websites in many ways.

### ***5.6.4 Beyond the control***

The results of this study have indicated that sometimes, Web 2.0 is beyond the control of the librarians who manage them, such as- due to the unconsciousness of librarians, client's facebook account can be seized and his/her images will be roughed to his/her friends.

### ***5.6.5 Unqualified staff***

It has also found that most of the personnel of the library are not enough experienced about using Web 2.0 technologies.

### ***5.6.6 Inadequate time***

One of the major aspects of information professionals often express concern about is lack of time in-terms of workload for the staff managing Web 2.0 tools (Chawner, 2008; Daihani, 2009). Findings of this study have shown that students express that they aren't satisfied about their library's timing hour. Because, students spend most of their time in class at days. For that reason, they can't use library properly which is a big threat of using Web 2.0 in libraries.

### ***5.6.7 Scarcity of knowledge***

The challenges relating to personal barriers are a need to raise awareness of the potential of Web 2.0 tools, a need for facilitating cultural change and willingness of staff to engage with Web 2.0 services (Kelly et al., 2009). It has confirmed about saying of some students that they haven't proper knowledge about these technologies. They have told that if library authority can arrange seminars/workshops about the use of Web 2.0 technologies, they will be concerned about these technologies.

## 5.7 SWOT analysis at a glance

The most prominent points of SWOT analysis have identified based on the above discussions which are presented in the following way:

**Table 5.1: SWOT analysis at a glance**

<b>Strengths of Web 2.0 technology</b>	<b>Weaknesses of Web 2.0 technology</b>	<b>Opportunities of Web 2.0 technology</b>	<b>Threats of Web 2.0 technology</b>
<ul style="list-style-type: none"> <li>• Increase importance of the library to the user</li> <li>• Collaborate and share information online</li> <li>• Comfortable technology than other technologies</li> <li>• Enhance knowledge and interactions</li> <li>• Instant problem solving skill</li> <li>• Build community spirit among students</li> <li>• Better understanding of students' needs</li> </ul>	<ul style="list-style-type: none"> <li>• Decrease socialization</li> <li>• Time constraint</li> <li>• Limitation in the quality of interactions</li> <li>• Uncertainty about ownership and assessment issues</li> <li>• Disruptive interaction</li> </ul>	<ul style="list-style-type: none"> <li>• Increase confidence</li> <li>• Opportunities for librarians to market their services</li> <li>• Enable libraries to reach a wide range of their users</li> <li>• Improve knowledge sharing and collaboration</li> <li>• Help searching the library catalogue</li> <li>• Increase the quality of group work</li> <li>• Provide information literacy instruction</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of security and privacy</li> <li>• Difficult to ensure reliability of the service</li> <li>• Beyond the control of librarians</li> <li>• Incompetent staff</li> </ul>

## **5.8 Conclusion**

In order to promote the use of Web 2.0 in libraries of Bangladesh, it is very important to know what kind of Web 2.0 technologies have libraries adopted, and what are the implications of using Web 2.0 technologies in libraries. It is also very important to raise awareness among library personnel and users to use Web 2.0 properly in libraries. For conducting this purpose, the research has drawn a broad investigation to determine the benefits and hindrance associated with the use of Web 2.0 technology in private university libraries of Bangladesh. First of all, analyzing the data based on the use of Web 2.0 technology in the perspectives of LIS professionals as well as academics and students. After analyzing, the data is presented in the form of SWOT analysis which method provides us to systematically converse the implications of using Web 2.0 in libraries of Bangladesh.



## Chapter 6

### Conclusion

#### 6.1 Introduction

The final chapter summarizes the overall findings of this research, and focuses on the major findings of the study to provide the answers of research questions which was designed and formulated in chapter 1. The rest of this chapter is structured as follows: The second section answers four research questions. The third section presents the practical implications of the research for the Library and Information Science (LIS) professionals as well as for the academics and students. The fourth section discusses the limitations of the research; and the fifth and final section of this chapter presents directions for future research.

#### 6.2 Answers to Research Questions

The findings of this study are able to provide answers to the research questions, have discussed below:

##### **MRQ: What are the strengths, weaknesses, opportunities and threats of using Web 2.0 technologies in the private university libraries of Bangladesh?**

Based on the findings of the study, the strength of the Web 2.0 technology is the aptitude to meet the requirements of the clients. It allows clients to stay modernized on library news. Also, it shares image of books, pictures and videos of the library with clients. It allows visitors to add, remove, and edit content. Web 2.0 is reducing isolation and geographical distance gradually from one library to another library.

It has found in the study that the Weakness of the Web 2.0 is that it reduces face-to-face socialization among individuals. Sometimes, it becomes a waste of time unless it is used in a proper way. Although most of the clients use Web 2.0 technology in the libraries of Bangladesh to work, study and social purposes, furthermore, it is true that it is easy to

become distracted and end up spending valuable time on games, chats or other non-related activities. As clients can add, remove and edit content at well through Web 2.0 technology, there is a possibility of creating any disturbing elements; which is not necessary for others. That's why the relationship between client and library is hampered.

The results of this study have also found that one of the greatest opportunities of the Web 2.0 technology in private university libraries of Bangladesh is the ability not only to use social/fun but also to use work and study. Furthermore, it supplies students the educational requirements, such as- software, notes and lectures, which are beneficial for them and also provides reference and information services to distant users through live chatting. It creates opportunities for librarians to market their services and collections to their clientele.

And, lastly, the findings indicate the threat of Web 2.0 in libraries is that sometimes it becomes out of control for the librarians. As the possibility of restriction is low to use the website of library, anybody post extraneous information and inappropriate comments through Web 2.0. Another case, most of the library's personnel and students are not enough experienced about using Web 2.0.

**SRQ1: What type of Web 2.0 technologies have Bangladeshi private university libraries adopted as revealed on their websites?**

The findings of this study reveal that Bangladeshi private university libraries have not fully applied Web 2.0 tools, which are commonly used in libraries, such as RSS Feed, Instant Messenger, and Image Sharing Tool. However, other Web 2.0 tools such as Social Networking Tool (e.g. Facebook, Twitter, MySpace, LinkedIn), User comment, E-mail Group, Blogs & Wikis, Video Sharing Tool, Social Bookmark, and Book Review have been implemented by the university libraries, has shown in (Table 3.11; Chapter 3).

**SRQ2: For what reasons are academics and students using Web 2.0 technologies in libraries?**

The results of this study have indicated that academics and students highly use Web 2.0 tools in libraries, such as Social Networking Tool, E-mail Group, and Blogs & Wikis, while Video Sharing Tool, Image Sharing Tool, Book Review, Instant Messenger, User Comment, Social Bookmark, and RSS Feed are used less (Table 4.4; Chapter 4). It has shown that although few interviewees use these technologies only for social/fun, but the maximum number of interview participants uses such kind of technologies for socializing, working and studying.

**SRQ3: How do LIS professionals as well as academics (faculty members) and students perceive the use of Web 2.0 tools for library services?**

It has also found that academic librarians have a positive view about the use of Web 2.0 in private university libraries of Bangladesh, and they feel that Web 2.0 tools such as: Social Networking Tool, User Comment, and E-mail Group will be very useful for library services and also feel that Image sharing tool will not be useful for library services. Regarding the usefulness of Web 2.0 tools in library services (Table 3.12; Chapter 3), the LIS professionals have reported that "Social Networking Tool" is useful in library services with the highest mean score of 6.09 on 7-point Likert scales, followed by "User Comment" (mean score 5.37), "E-mail Group" (mean score 5.26), "RSS Feed" (mean score 4.89), "Blogs & Wikis" (mean score 4.51), "Book Review" (mean score 4.46), "Instant Messenger" (mean score 4.37), "Video Sharing Tool" (mean score 4.31), "Social Bookmark" (mean score 4.00), and "Image Sharing Tool" (mean score 3.63). Regarding the use of Web 2.0 tools (Table 4.5; Chapter 4), the academics and students have reported that Web 2.0 tools have been used to- "Help knowledge sharing" with the highest mean score of 5.15 on 7-point Likert scales, followed by "Increase the quality of group work" (mean score 5.12), "Help creating new friendship" (mean score 5.11), "Inform users about library materials" and "Publish library news and events" (mean score 5.06), "Provide information literacy instruction" (mean score 5.02),

“Help searching the library catalogue” (mean score 4.91), “Increase the quality of individual work” (mean score 4.6), “Increase confidence in working in the library” (mean score 4.58), “Web 2.0 will be a cause of information overload” (mean score 4.11), as well as “Web 2.0 will be a waste of time” (mean score 2.95).

### **6.3 Practical Implications**

The following practical implications and benefits can be expected from the study:

#### ***6.3.1 Implications for Library and Information Science (LIS) professionals***

For LIS professionals, the findings of this study offer a clear concept of Web 2.0 technologies and the eccentric usages of Web 2.0 technologies in libraries. The quantitative analysis of different merits, demerits and constraints on Web 2.0 usage in libraries offers an inclusive picture of Web 2.0 technology usage for LIS professionals. These findings offer a set of suitable recommendations in order to overcome the problems on the use of Web 2.0 in library. The findings confirm that the LIS professionals held neither highly-positive nor highly-negative opinions about Web 2.0 usages and applications in libraries of Bangladesh.

### ***6.3.2 Implications for academics and students***

The findings of this study also offer benefits to both academics and students. For academia and students, they offer a comprehensive understanding of Web 2.0 concepts and distinctive usages of Web 2.0 in libraries. The quantitative analysis of the purposes of using Web 2.0 in libraries offers a complete picture of Web 2.0 purposes for academia and students, particularly for libraries. Therefore, the findings will be beneficial for all libraries for further enhancement of Web 2.0 tools or adoption of Web 2.0 tools in their libraries. The academics and students have reported both negative and positive aspects of Web 2.0, which can be considered in re-designing the present Web 2.0 technology.

However, this research contributes to establish clear concepts of Web 2.0 and bridging the gap between libraries that use Web 2.0 technologies and those that do not. It will be helpful to those libraries which are planning to embrace Web 2.0 to deliver their education. Furthermore, researchers and LIS professionals may also find this research useful once they intend to do research relating to Web 2.0 in library.

### **6.4 Limitations of the Research**

The main limitation of the research was that the scope of data collection was very limited. Due to insufficiency of time and fund, the research was held only in Bangladesh. It could be useful, if the research could include the research sample not only in Bangladesh but also in other countries. In addition, the research looked mainly at the LIS professionals as well as academics and students, but the situation could lie in the perceptions of administrators as well.

## **6.5 Directions for Future Research**

Based on the experiences of this research, the directions for future research will be:

- 1.** To extend the sample to incorporate other countries.
- 2.** Future research may combine different methods, such as- content analysis, survey, or case studies, as these methods can collect opinions of faculty members, LIS professionals and library users that will give different perspectives. Such methods may investigate other aspects of Web 2.0 technologies in the library.
- 3.** To deeply investigate internal use of Web 2.0 applications by tracking them over a long period of time.

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## **Appendix- A**

### **Interview on “Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Library and Information Science (LIS) Professionals”**

**Targeted Interviewees:** Library and Information Science (LIS) Professionals

Date: 05-02-2013

To,

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**Subject: Seeking for an appointment for the interview.**

Dear Sir/Madam,

You will be glad to know that one of my Master of Arts (MA) student namely ‘X’ bearing the roll-4737, is going to conduct a research on “The SWOT Analysis of Using Web 2.0 Technology in Some Selected Private University Libraries of Bangladesh” as a partial fulfillment of the degree of Master of Arts. In this regard, she needs to collect data from the academics and students. She also needs some opinions from you as an expert Library and Information Science (LIS) professional about the afforested topics. Would you please give her an appointment and take part in her interview process.

As an academic supervisor, I appreciate your kind cooperation and efforts.

Thanking You,

‘Y’,

Associate Professor,

Dept. of Information Science and Library Management.

University of Dhaka, Dhaka-1000

**Interview on “Use of Web 2.0 Technology in Private University Libraries of Bangladesh:  
Perceptions of Library and Information Science (LIS) Professionals”**

**Please give a tick (v) mark where necessary**

**Section 1: Web 2.0 concepts, merits and demerits of using Web 2.0 tools and technologies**

1.1 Please, identify the 5 technologies of Web 2.0 from the following list:

iPods	<input type="checkbox"/>	Personal Websites	<input type="checkbox"/>
RSS	<input type="checkbox"/>	Britannica Online	<input type="checkbox"/>
Facebook	<input type="checkbox"/>	MP3	<input type="checkbox"/>
Wikipedia	<input type="checkbox"/>	Wikis	<input type="checkbox"/>
Blogs	<input type="checkbox"/>	Tags (folksonomy)	<input type="checkbox"/>
YouTube	<input type="checkbox"/>	Directories (taxonomy)	<input type="checkbox"/>

1.2 Please mention the year when Web 2.0 technology has been introduced in your library?

Less than 1 year	<input type="checkbox"/>
1-3 years	<input type="checkbox"/>
4-6 years	<input type="checkbox"/>
7-9 years	<input type="checkbox"/>

1.3 Would you please mention, currently how many students are acquiring education in your library through Web 2.0 technologies?

50-100	<input type="checkbox"/>
100-250	<input type="checkbox"/>
250-500	<input type="checkbox"/>
Over 500	<input type="checkbox"/>
All students	<input type="checkbox"/>

1.4 Can Web 2.0 technology improve knowledge sharing and collaboration?

Yes  No

1.5 Do you think, Web 2.0 technologies are excellent opportunities for librarians to market their services and collections to their clientele?

Yes  No

1.6 Can Web 2.0 technologies enable libraries to reach a wide range of their users in the shortest time and to attract new users?

Yes  No

1.7 Please specify the merits of Web 2.0 technologies in your library from the following list (You may select more than one answer).

- Build community spirit among students
- Increase importance of the library to the user
- Improve the library image
- Improve communication of the library with users and improve in communication among librarians
- Overcome isolation and geographical distance
- Share library news and events
- Enhance librarians' knowledge
- Better understanding of students' needs
- Others (please specify): .....

1.8 Please mention the demerits of using Web 2.0 technologies in your library from the following list (You may select more than one answer).

- Create unpleasant elements that can sabotage social websites in many ways
- Create additional workload for students as well as educators
- Create selective or disruptive interaction among students
- Create a risk to the security and privacy of users
- Decrease socialization
- Difficult to ensure reliability of the service
- Others (Please specify): .....

**Section 2: Usage of Web 2.0 tools and technologies**

2.1 Is Web 2.0 technology used by all library staff?

Yes  No

2.2 Have you ever received training on use of Web 2.0 tools?

Yes  No

2.3 Which of the following Web 2.0 tools does your library use? (You may select more than one answer).

- E-mail Groups
- Instant Messenger (e.g. AOL)
- Blogs and Wikis
- Image Sharing Tool (eg. Flickr, Picasa)
- Video Sharing Tools (eg. You Tube, Metacafe)
- Social Networking Tools (eg. Facebook, Twitter, MySpace, LinkedIn)
- Social Bookmarks
- RSS Feed
- Book reviews
- User comments
- Others (Please specify): .....

2.4 How can Web 2.0 tools services in your library be managed? Is there be a specialized person(s) dealing with them? Please specify-

.....  
.....  
.....

2.5 In your opinion please rate the degree to which you agree/ disagree that the following Web 2.0 tools, are useful for your library services. (1=strongly disagree; 2=disagree somewhat; 3=disagree; 4=neutral; 5=agree; 6=agree somewhat; 7=strongly agree)

E-mail Group	1	2	3	4	5	6	7
Instant Messenger (e.g.Meebo, AOL)	1	2	3	4	5	6	7
Blogs and Wikis	1	2	3	4	5	6	7
Images Sharing Tool (eg. Flickr, Picasa)	1	2	3	4	5	6	7
Video Sharing Tool (eg. You Tube, Metacafe)	1	2	3	4	5	6	7
Social Bookmark	1	2	3	4	5	6	7
Social networking tool (e.g. Facebook, Twitter, MySpace, LinkedIn)	1	2	3	4	5	6	7
RSS Feed	1	2	3	4	5	6	7
Book Review	1	2	3	4	5	6	7
User comment	1	2	3	4	5	6	7

2.6 Would you mention please what are the required skills to use Web 2.0 tools? (You may select more than one answer).

- ICT skills
- Information literacy skills
- Communication skills
- Collaborative teamwork
- Research skills
- Project management skills
- Others (Please specify): .....

2.7 Have you taken any initiative to adopt any other Web 2.0 technologies in your library?

- Yes  No

2.8 If yes, please specify which Web 2.0 technologies that you plan to adopt for your library? (You may select more than one answer).

- E-mail Group
- Instant Messenger (e.g. AOL)
- Blogs and Wikis
- Image Sharing Tool (eg. Flickr, Picasa)
- Video Sharing Tool (eg. You Tube, Metacafe)
- Social Networking Tool (eg. Facebook, MySpace, LinkedIn)
- Social Bookmark
- RSS Feed
- Book review
- User comment
- Others (Please specify): .....

2.9 Is Web 2.0 more comfortable technology than other technologies?

- Yes  No

**Section 3: Constraints faced by academic libraries in using Web 2.0 technologies and recommendations to overcome the constraints**

3.1 Do you think, Web 2.0 technologies can create the high workload, the limited quality of interaction as well as uncertainty about the ownership and assessment issues?

Yes  No

3.2 Is Web 2.0 beyond the control of the librarians who manage them? Please specify-

Always   
 Sometimes   
 Rarely   
 Never

3.3 Please indicate the degree to which you agree or disagree with the statement that the following obstacles will be faced from using Web 2.0 tools in your library (1=strongly disagree; 2=disagree somewhat; 3=disagree; 4=neutral; 5=agree; 6=agree somewhat; 7=strongly agree).

Time	1	2	3	4	5	6	7
Staff training	1	2	3	4	5	6	7
Privacy	1	2	3	4	5	6	7
Institutional policies	1	2	3	4	5	6	7
Technological barriers	1	2	3	4	5	6	7

3.4 Do you think, academic IT facilities of your library are enough for Web 2.0 tools and technologies?

Yes  No

3.5 Do you have any other observations, comments or recommendations regarding the use of Web 2.0 tools and technologies in academic libraries? Please specify-

.....  
.....  
.....

**Section 4: Interviewees' profile**

4.1 Please indicate your age group from the following:

- 25-34
- 35-44
- 45-54
- 55-64
- 65 and older

4.2 Gender:

- Female
- Male

4.3 Would you please specify your designation/working position?

.....

4.4 How many years have you worked in the profession?

- 0- 5
- 6-10
- 11-15
- 16-20
- 21 and above

**Thank you very much for your participation and cooperation!**



## **Appendix- B**

### **Interview on “Use of Web 2.0 Technology in Private University Libraries of Bangladesh: Perceptions of Academics (i.e. faculty members) and Students”**

**Targeted Interview Participants:** Academics (i.e. faculty members) and Students.

Date: 05-02-2013

To,

.....

.....

.....

**Subject: Seeking for an appointment for the interview.**

Dear Sir/Madam,

You will be glad to know that one of my Master of Arts (MA) student namely “X” bearing the roll-4737, is going to conduct a research on “The SWOT Analysis of Using Web 2.0 Technology in Some Selected Private University Libraries of Bangladesh” as a partial fulfillment of the degree of Master of Arts. In this regard, she needs to collect data from the academics and students. As an expert academic, she needs some opinions from you about the afforested topics. Would you please give her an appointment and take part in her interview process.

As an academic supervisor, I appreciate your kind cooperation and efforts.

Thanking You,

“Y”,

Associate Professor,

Dept. of Information Science and Library Management.

University of Dhaka, Dhaka-1000

**Interview on “Use of Web 2.0 Technology in Private University Libraries of Bangladesh:  
Perceptions of Academics (i.e. faculty members) and Students”**

**Please give a tick (✓) mark where necessary**

**Section 1: Concept of Web 2.0 tools and technologies**

1.1 What do you think about the concept of Web 2.0? Web 2.0 is—

- The development of social networks
- The second generation of web-based tools and services that is focused on the ability for people to collaborate and share information online
- A commentary or news on a particular subject
- A web site that allows visitors to add, removes, and edits content
- An open and informal method of categorizing that allows users to associate keywords or “tags” with online content
- Web 2.0 will be a waste of time

1.2 Do you think, Web 2.0 technology is helpful in education?

- Helpful
- Not helpful
- No comments

1.3 Can Web 2.0 technology improve knowledge sharing and collaboration?

- Yes
- No
- No comments

1.4 Can Web 2.0 technology be used as instant problem solving tools?

- Yes
- No
- No comments

1.5 Do you think, Web 2.0 technology can improve the interactions among the teachers and students?

- Yes
- No
- No comments

1.6 As a faculty member, do you think, Web 2.0 is good that you don't have to come into lesson when lectures are put online which provide students with satisfactory integrated resources, softwares, notes and lectures to be utilized online?

Yes  No

**[N.B: Students are requested not to answer the question of 1.6]**

**Section 2: Usage of Web 2.0 tools and technologies**

2.1 Which Web 2.0 tools do you like most from the following? (You may select more than one answer)

- E-mail Group
- Instant Messenger (e.g. Meebo, AOL)
- Blogs and Wikis
- Images Sharing Tool (eg. Flickr, Picasa)
- Video Sharing Tool (eg. You Tube, Metacafe)
- Social Networking Tool (eg. Facebook, Twitter, MySpace, LinkedIn)
- Social Bookmark
- RSS Feed
- Book review
- User comment
- Others (Please specify): .....

2.2 Please indicate your purpose **(s)** of using the following Web 2.0 tools in libraries:

Web 2.0 tools and technologies	Work	Study	Social/Fun	Work & Study	Social/Fun & Work	Study & Social/Fun	All 3 purposes	Never use
E-mail Group								
Instant Messenger (e.g.Meebo, AOL)								
Blogs and Wikis								
Images Sharing Tool (eg. Flickr, Picasa)								
Video Sharing Tool (eg. You Tube, Metacafe)								
Social Bookmarks								
Social Networking Tool (e.g Facebook, Twitter, MySpace, LinkedIn)								
RSS Feed								
Book Review								
User comment								

2.3 Is Web 2.0 more comfortable technology than other technologies?

Yes

No

2.4 Please rate your agreement with the following statements with regards to Web 2.0 technologies (1=strongly disagree; 2=disagree somewhat; 3=disagree; 4=neutral; 5=agree; 6=agree somewhat; 7=strongly agree)

Web 2.0 tools have been used for the following reasons:

To increase my confidence in working in the library	1	2	3	4	5	6	7
To help me creating new friendship	1	2	3	4	5	6	7
To provide information literacy instruction	1	2	3	4	5	6	7
For searching the library catalogue	1	2	3	4	5	6	7
To help in knowledge sharing with others	1	2	3	4	5	6	7
To inform users about new books, databases and journals	1	2	3	4	5	6	7
To publish library news and events	1	2	3	4	5	6	7
To increase the quality of group work	1	2	3	4	5	6	7
To increase the quality of individual work	1	2	3	4	5	6	7
Web 2.0 will be a cause of information overload	1	2	3	4	5	6	7
I think implementing Web 2.0 will be a waste of time	1	2	3	4	5	6	7

**Section 3: Problems faced by academic libraries in using Web 2.0 technologies and recommendations to overcome the problems**

3.1 Would you please mention which are the major problems to use Web 2.0 tools in your library from the following list? (You may select more than one answer)

- Lack of ICT skills
- Lack of research skills
- Lack of project management skills
- Lack of communication skills
- Lack of collaborative teamwork
- Others (please specify): .....

3.2 Do you think, Web 2.0 technologies may be open to unpleasant elements that can damage social websites in many ways?

- Yes  No

3.3 Can Web 2.0 create disruptive interaction among students?

- Yes  No

3.4 Please indicate the degree to which you agree or disagree with the statement that the following obstacles will be faced from using Web 2.0 tools in your library.(1=strongly disagree; 2=disagree somewhat; 3=disagree; 4=neutral; 5=agree; 6=agree somewhat; 7=strongly agree).

Time	1	2	3	4	5	6	7
Staff training	1	2	3	4	5	6	7
Privacy	1	2	3	4	5	6	7
Institutional policies	1	2	3	4	5	6	7
Technological barriers	1	2	3	4	5	6	7

3.5 Do you have any other observations, comments or recommendations regarding the use of Web 2.0 tools and technologies in academic libraries? Please specify-

.....

.....

.....

**Section 4: Interviewees' demographic information**

4.4 Please indicate your age group from the following:

- 18-24
- 25-34
- 35-44
- 45 and older

4.5 Gender:

- Female
- Male

4.6 Please specify your designation/working position:

- Academic (Faculty member)
- Student

4.7 Would you please mention your highest level of educational qualification?

.....

**Thank you very much for your participation and cooperation!**