Chapter 1
INTRODUCTION

1.1 Introduction

Recent decades have witnessed the rapid transformation of the library with the application of Information and Communication Technologies (ICT). Libraries have developed and diversified their services based on ICT. One such technology is Web 2.0 tools and technologies which have recently emerged as a second generation of web-based technologies for various types of communication. This technology facilitates and also redefines an attitude towards sharing of information, and the cumulative web usage. Now-a-days Web 2.0 has been strongly applied in the fields of e-commerce, online advertising, entertainments, gaming, host of online services and all other fields available. It also has been a widely applied technology in the library by the library community. Such technologies have just created a new wave of applications in libraries, and also attracted the attention of researchers, scholars, library user community as a whole and librarians are only beginning to acknowledge and write about Web 2.0, primarily in the form of weblogs (Maness, 2006). Most of the writings about Web 2.0 and libraries describe the potential use of Web 2.0 in the library (Linh, 2008; Bradley 2007; King and Porter 2007).

There is a little research that has focused on the evaluation of Web 2.0 applications in the libraries worldwide, especially in the case of national libraries. National libraries are treasure houses of memories of family mementos of the nations' stories and of the creative arts of literature, music, dance, painting, photography and many more. The national library is a very large reference library with vast infrastructure in the country. So Web 2.0 tools and technologies supports the national libraries in a significant manner, it will contribute to the nations’ collection building and sharing knowledge, allows users to interact and collaborate with each other in a social media enabled dialogue in a virtual environment.
The libraries around the world in general and national libraries in particular have always played a major part in knowledge dissemination activity (both nationally and internationally). It promotes an understanding and collaborates on matters of common interest to libraries worldwide, allowing libraries to explore Web 2.0 tools and technologies in a safe environment where best practice can be easily shared.

1.2 Need for the study

The study of adoption of Web 2.0 tools and technologies, especially in the field of libraries has been a significant and exciting aspect for the last few years. The impersonal space of the World Wide Web (WWW) is rapidly being replaced by Web 2.0 tools and technologies that put an individual user in the spotlight. The application of Web 2.0 tools facilitates easy, collaborative and instantaneous access to the library resources. It (Web 2.0) has opened many opportunities for the libraries to extend the services through user interface with librarians and modes of delivering the information to the intended users in significantly less time. In a normal circumstance every national library has its own website. As expected, in the last few years all-most-all types of national libraries have implemented Web 2.0 tools and technologies. Web 2.0 invites user participation, encourages constant and purposeful change. There is a need to investigate the adoption of Web 2.0 tools such as blogs, bookmarks, RSS, podcasts, mashups, YouTube, wikis, social networks (Facebook, Orkut, Netlog and so on) in national libraries around the world.

A national library represents an entire nation. National library are established by governments for three purposes. The first role of a national library is to house the collection of the most important works in that country. National bibliographic control is the second purpose of a national library. Some libraries do this through mandatory or legal deposit laws, in which publishers are legally required to submit copies of copyrightable materials to the, national library, sometimes even if they do not intend to publish the work. A third function is to have international bibliographic control, this facilitates the location and acquisition of information by foreign users, having similar
cataloging systems in a place is critical to fulfilling this function for the national library. A national library in an architecturally creative space and it definitely supports what people think libraries should stand for – an outlet and expression of freedom and creativity.

The national libraries have major qualities and characteristics such as providing leadership in their own space of information collection and dissemination. A national library plays a leader role with main responsibility by providing information to other libraries and library users across the country. By adopting Web 2.0 tools and technologies, users can easily get the information without any geographical barriers and this technology reduces the gaps which lead to the effective flow of information between libraries within the national and among other national libraries. Secondly community participation - through Web 2.0, national libraries and users (throughout the world) can communicate each other within a short span of time and also update the information quickly. So the technology offered by the national libraries shares knowledge, helping to create opportunities for understanding, saves the time, faster way of reaching information to the users and enables a dialogue between people/community who can access an information / resource virtually. Lastly the budget for resource/ collection development and library infrastructure costs can be curtailed to a large extent. Therefore, national libraries are the country’s largest reference sources of the information published within and across. By adopting Web 2.0 tools and technologies, national libraries enable users, professionals and public who can watch or listen to book reviews and events of national interest online via the library’s podcast page, keep up-to-date on the national library news and events, publications adopting RSS feeds.

From the review of literature, it is found that there are considerably fair numbers of publications available on Web 2.0 (O’ Reilly, 2005) and associated technologies. Most of the earlier publications have been concentrated on the theoretical aspects of Web 2.0. More recently the researchers concentrating on the application of Web 2.0 in many disciplines such as Medicine, Government, Enterprise, and others (Smith, 2009). A very few studies have been carried out on the application of Web 2.0 tools and technologies in
libraries, that too on academic libraries (Haneefa, 2010; Svensson, 2007; Crook, 2009; Gatenby, 2007; Yong-Mi, 2010; and Chua, 2010). Some of the studies have also reported that, Web 2.0 tools and technologies have been successfully adopted in European and Australian national libraries. So there is a need for taking up a research to analyze the performance of the Web 2.0 tools and technologies in the national libraries and also to evaluate the adoption of Web 2.0 tools and technologies in various national libraries around the globe. Hence the investigator has proposed to conduct a study on the adoption of Web 2.0 tools and technologies in the national libraries of the world.

1.3 Statement of the problem

The present research theme is conceived under the title “Adoption of Web 2.0 Tools and Technologies in the National Libraries of the World: A Comparative and Evaluative Study”

1.4 Definition of key terms

The key concepts in the title are “Web 2.0 tools and technologies”, “National libraries,” “Evaluative study” and “Comparative study.” The definition of these terms has been drawn from various sources.

Web 2.0

According to O’Reilly Web 2.0 technologies provide rich and lightweight online tools that let users contribute new data that they can aggregate to harness a community’s “collective intelligence.”

According to Dario de Judicibus “Web 2.0 is a knowledge-oriented environment where human interactions generate content that is published, managed and used through network applications in a service-oriented architecture” (as quoted in Deloitte consulting LLP, 2008).
Oxford Dictionary defines Web 2.0 as, “the second stage of development of the Internet, characterized especially by the change from static web pages to dynamic or user-generated content and the growth of social media.”

**National library**

Encyclopedia of Library and Information Science (2001) defines national library as “a library which has been maintained out of government funds and serving the nation as a whole. Usually, books in such libraries are the reference only. They are usually copyright libraries. The function of such a library is to collect and preserve for posterity the books, periodicals and newspapers published in the country. This is best done by a law requiring publishers to deposit copies of all published in other countries. The function of national libraries varies considerably. They may compile union catalogues, produce a national bibliography, publish a retrospective national bibliography, or act as a national bibliographical centre.”

“A national library is a library specifically established by the government of a country to serve as the preeminent repository of information for that country. Unlike public libraries, these rarely allow citizens to borrow books. Often, they include numerous rare, valuable or significant works.” (Wikipedia, 2011)

**Evaluative study**

Evaluation is defined variously, depending on the subject matter, applied methodology or the application of its results.

According to Korporowicz (1997) evaluation as a systematic survey of values or features of a given program, activity or an object, taking into consideration the adopted criteria to enhance, improve or understand them better.

**Comparative study**

American Heritage Dictionary of the English Language (2000) defines comparative study as “relating to, based on, or involving comparison. Of or relating to
the scientific or historical comparison of different phenomena, institutions, or objects, such as languages, legal systems, or anatomical structures, in an effort to understand their origins or relationships”.

1.5 Objectives of the study

1. To identify the national library URL’s and examine their accessibility.
2. To find out various Web 2.0 tools and technologies being used in the national libraries.
3. To understand the purpose and the features of Web 2.0 tools and technologies used in the national libraries
4. To evaluate the functional levels of Web 2.0 tools and technologies used in the national libraries websites.
5. To study the influence of Web 2.0 technology applications in the national libraries websites.

1.6 Hypotheses

1. National libraries adopted varied types of Web 2.0 tools and technologies
2. National libraries in developed countries have deployed varied types of Web 2.0 tools and technologies
3. National libraries which have adapted Web 2.0 tools and technologies have a distinct purpose and features.
4. National libraries which have adapted Web 2.0 tools and technologies have effectively accomplished their aim.
5. Continents wise national libraries vary in their purpose and features of adoption of Web 2.0 tools and technologies
6. National libraries in the developed and underdeveloped countries which have adopted Web 2.0 technologies differ significantly in their effectiveness.
1.7 Methodology

1.7.1 Research method

The content analysis research method has been used for this comparative and evaluative study. In the past “content analysis method is used to identify and record the meaning of documents and other forms of communication in a systematic and quantitative way” (Allen and Reser, 1990). Recently this method has been applied to modern technologies such as radio, television, Internet and websites (Salinas, 2006). Krippendorff (1980) asserts that content analysis is context sensitive. The above characteristics and advantages of content analysis proved to be suitable for this research to evaluate Web 2.0 tools being adopted in national libraries and their websites.

Therefore, the study has been conducted in different levels, such as:

**Level 1**  
Identified the type of Web 2.0 tools and technologies adopted in the national library websites.

**Level 2**  
The investigator found that even though the Web 2.0 tools and technologies adopted in those national library websites and is continuously updated by providing the current information from time to time.

**Level 3**  
The investigator took those websites which have been updated with the information sources, news, etc., in such cases users interact with the sites and library staff; and the users share the ideas, comments, suggestions that will be considered as a good application of Web 2.0 tools and technologies.

1.7.2 Research sample

The list of national libraries has been taken from the Wikipedia, websites referred from International Federation of Library Associations and Institutions, UNESCO and University of Queensland, Encyclopedia Britannica, World Atlas and Yahoo Directory. Based on these sites, it is found that 256 countries have 207 national libraries, but only 171 national libraries have their own official websites around the
world. The most important task of any experimental research is to decide what is to be observed, recorded and there after considered as data. In the present study, the investigator decided to collect as large sample as possible by the following methods:

- Prepared a list of 171 national libraries websites
- Accessed all national library websites from the list to identify the existence of Web 2.0 tools and technologies
- Marked the national libraries on the list that used any one type of Web 2.0 tools and technologies
- The necessary statistical tools have been used to synthesize and analyze the data, and discover the result. Mini tab and SPSS software have been used in the data analysis.

### 1.7.3 Development of research instrument

Due to the absence of generally accepted criteria or standards to evaluate application of Web 2.0 tools and technologies in the library, the researcher developed a new research instrument. This instrument is in the form of a checklist which has been used to collect data for the research (provided in the appendices).

The checklist is adapted from and based on various checklists, questionnaires, and synthesized ideas derived from the literature review. The checklist is based primarily on the usability evaluation of library websites (Keevil, 1998) and the list of checkpoints for web content accessibility guidelines 1.0 (W3C, 1999).

Basically, the checklist consists of checkpoints (questions) along with options as **Yes = 1 and No = 0** and the list of national libraries that apply any types of Web 2.0 tools and technologies. The checkpoints in the checklist are not “standards” developed by the International Organization for Standardization (ISO) or a professional organization. They are a list of features and criteria that emerged from the content analysis of literature on Web 2.0 in libraries, and from checklists and questionnaires as
mentioned above. This part includes the analysis, suggestions, investigation and innovation of patterns and relationship in the data.

The main work involved includes:

- Summary of data, representing in such a way so that it can be better comprehended or interpreted.
- Discovering the outlines and relationships within the data
- Relating the findings from this analysis to the findings of earlier studies, wherever possible.

1.8 Scope and limitations of the study

The purpose of this study is to provide an overall picture of the use of Web 2.0 tools and technologies in the national libraries of the world and their purposes and features. The following are the scope and limitations of the study:

- The study covers only those national libraries, whose websites are accessible through the Internet
- The study covers only those Web 2.0 tools and technologies that are publicly available for study.

During this study, the researcher has collected the preliminary data between December 2010 and February 2011 and again collected data from January to March 2014 and prepared a list of national libraries. It was found that 171 national libraries have websites while 109 national libraries have adopted the Web 2.0 tools and technologies and the same are taken for the present study.
1.9 Organization of the thesis

The thesis has been presented in five chapters

Chapter 1: Introduction

The first chapter introduces the topic of the research and highlights the need for the study, statement of the research problem, definition of key concepts, objectives, hypotheses and methodology adopted for data collection and data analysis. It also details the scope and limitations of the study and presents chapterisation.

Chapter 2: Review of related literature

The second chapter presents the review of literature on Web 2.0 tools and technologies and related areas.

Chapter 3: Web 2.0 and national libraries

The third chapter describes Web 2.0 technology tools like blogs, wikis, RSS, bookmarks, social networks, podcasts and YouTube etc. and highlights these technology applications to the library services.

Chapter 4: Analysis and interpretation of data

The fourth chapter covers the results of the data collection. The data collected has been analyzed / examined and synthesised the purpose and features of the application of these technologies in the national libraries.

Chapter 5: Findings, recommendations and conclusion

The fifth chapter presents a summary of the findings of the investigation and concludes with practical suggestions for improving the implementation of the Web 2.0 tools and technologies to provide better services in the national libraries.
References


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