PROSPECTS OF DIGITAL LIBRARY IN NEPAL
A USERS' PERSPECTIVE

A thesis submitted to the Central Department of Library and Information Science, Tribhuvan University, in partial fulfillment of the requirements for the degree of Master of Arts in Library and Information Science

Submitted by:
Reju Pokharel

Central Department of Library and Information Science
Faculty of Humanities and Social Sciences
Tribhuvan University
Kathmandu, Nepal
May, 2011

Tribhuvan University
Faculty of Humanities and Social Sciences
Central Department of Library and Information Science

Kirtipur
Kathmand
Tel. No. 433131
Date: .....

E-mail: lisd@healthnet.org.
Website: http://www.tulisd.edu.

ce No.:

LETTER OF RECOMMENDATION

This is to certify that Reju Pokharel has prepared this thesis entitled "PROSPECTS OF DIGITAL LIBRARY IN NEPAL: A USERS' PERSPECTIVE" under my supervision and guidance. I recommend this thesis for final approval and acceptance.

.....
Bhim Dhoj Shrestha
(Thesis Supervisor)

Date:.....

Tribhuvan University
Faculty of Humanities and Social Sciences
Central Department of Library and Information Science

Kirt
Kathma
Tel. No. 433
Date: .....

nce No.:

E-mail: lisd@healthnet.o
Website: http://www.tulisd.e

Tribhuvan University
Central Department of Library and Information Science
Est.

LETTER OF ACCEPTANCE

This thesis entitled "PROSPECTS OF DIGITAL LIBRARY IN NEPAL: A USERS' PERSPECTIVE" prepared and submitted by Reju Pokharel in partial fulfillment of the requirements for the Master's degree in Library and Information Science is hereby accepted and approved.

Approval Committee:

.....
Bhim Dhoj Shrestha
(Thesis Supervisor)

.....
Yajya Raj Bhatt
(External Examiner)

.....
Dr. Madhusudan Karki
(Head of the Department)

Date: .....

ACKNOWLEDGEMENTS

First and foremost, I would like to express my since gratitude to Mr. Bhim Dhoj Shrestha who guided, supported and helped me tirelessly, despite his hectic schedule. He is truly acknowledged for his insightful guidance and extensive help and support. My sincere gratitude also goes to Dr. Mohan Raj Pradhan for his encouragement and support during the time of my research. My thanks are also to Dr. Madhusudan Karki, Head of the Department, Central Department of Library and Information Science, TU, Mrs. Nirmala Shrestha and Mr. Rudra Dulal who always inspired me for my work.

I am indebted, and will remain indebted all my life to late Mrs. Leela Dahal for her inspiration and guidance during the time I had been her student in Master's degree in Library and Information Science in TU.

My special thanks and appreciation go to Pawan Thapa of Madan Puraskar Pustakalaya, Chandra Bhushan Yadav of Nepal Health Research Centre and Jagadish Chandra Aryal of Social Science Baha for their cooperation and help in the time I was desperately searching for materials for my research. I would also like to thank Bishwo Raj Gautam, and Anupama Upadhyaya,for their continuous help and support during the time I was preparing this thesis.

Similarly, my beloved son Ashrut, who always helped and supported me whenever I needed any help, and loving husband who was always there to encourage and support me wholeheartedly whenever I needed his help and support, deserve my sincere appreciation and thanks for all the help and support they extended in connection with the preparation of this thesis.

Finally, I would like to express my sincere gratitude once again, to my thesis supervisor Mr. Bhim Dhoj Shrestha. I am also equally thankful to my external examiner Mr. Yajya Raj Bhatt.

Thank you.

Reju Pokharel
Exam Roll No: 5660/ 065
T.U. Registration No: 17351-88

ABSTRACT

"PROSPECTS OF DIGITAL LIBRARY IN NEPAL: A USERS' PERSPECTIVE" focuses on the current status of digital libraries of Nepal from the users' perspective. Different national and international literature has been reviewed during the study. Focus of the study is on the digital contents of 4 libraries from Kathmandu Valley. The study has been conducted inside the Kathmandu Valley with a sample of 4 libraries taken purposively using non-probability sampling method.

The study is chiefly based on primary data using questionnaire with few secondary data. The collected data have been presented and analyzed using frequency distribution tables and pie-charts with their detail interpretation.

The study reveals that most of the users (44%) use digital library for research purpose and they (56%) want full-text contents. Moreover, most of the respondents (48%) said that the digital content of the library is very much relevant and most of them (66%) found the scope of digital content wide and varied in terms of subject matter and format. Also, most of them (38%) think that updated contents are available in the library. Similarly, most of users (46%) think they always receive information they need to meet their need and purpose by visiting library and most of the respondents (58%) said that the digital contents of the library are sufficient enough which makes most of the respondents (58%) believe that their demands are fulfilled by the library. However, most of the respondents (44%) do visit other libraries to get the exactly the same information that they search for in one library. Thus, there remains a lot to be done in the field of digital library in Nepal like encouraging libraries to use digitized documents with the focus on research materials along with regularly updating the digital contents. Furthermore, recognizing knowledge on new technology and innovative activities should for their implementation in the library could help in the development of digital library in Nepal.

PREFACE

In layman's terms, a digital library is an electronic library where the information is acquired stored and retrieved in digital form. Modern information system is now able to represent the information electronically and manipulate automatically at high speeds. It has been felt that the traditional library system has not been effective to satisfy the need of users in terms of relevant and updated informational resources. It is a daunting task for traditional libraries to safeguard the valuable materials as they get damaged with the constant use. But a new form of library which is called 'digital library' has emerged as a boon for the preservation of such valuable materials. In this regard it is quite relevant to discuss and study different aspects of digital libraries. Thus, this study focuses on the aspects and relevance of digital contents in Nepal.

Four libraries namely Nepal Health Research Council (NHRC), Tribhuvan University Central Library (TUCL), Madan Puraskar Pustakalaya (MPP) and Social Science Baha Library (SSBL) were selected purposively for the study.

The study has been organized into six different chapters. First chapter includes the background information along with statement of the problem, objectives, scope and limitations, significance of the study, definition of terms and organization of chapters. Second chapter reviews some related literature while third chapter includes different topics that are focused in the study. Fourth chapter describes the methodology used for the study. In fifth chapter, collected data has been presented and analyzed and finally in sixth chapter, summary, conclusions and recommendations has been presented.

This study has been carried out as a partial fulfillment of the requirements for the degree of Master of Arts in Library and Information Science (MLISc). The study is about the libraries of Nepal but has been carried out inside the Katmandu Valley due to time and budget constraints. Nevertheless, it is hoped that this study will help in the development of digital library in Nepal.

Reju Pokharel

CATALOGUE OF THE THESIS

Main Card

D

025.00285 Pokharel, Reju

P756p Prospect of digital library in Nepal : a users' perspective / submitted by Reju Pokharel. – Kathmandu : Central Department of Library and Information Science, 2011.

xiv, 49 p. : ill. ; 30 cm.

Thesis (M.A.)–Central Department of Library and Information Science, Tribhuvan University, 2011.

1. Digital libraries. 2. Libraries – Automation. I. Title

Shelf List Card

D

025.00285 Pokharel, Reju

P756p Prospect of digital library in Nepal : a users' perspective / submitted by Reju Pokharel. – Kathmandu : Central Department of Library and Information Science, 2011.

Unacc. xiv, 49 p. : ill. ; 30 cm.

Thesis (M.A.)–Central Department of Library and Information Science, Tribhuvan University, 2011.

1. Digital libraries. 2. Libraries – Automation. I. Title

Added Entry (Subject)

D DIGITAL LIBRARIES

025.00285 Pokharel, Reju

P756p Prospect of digital library in Nepal : a users' perspective / submitted by Reju Pokharel. – Kathmandu : Central Department of Library and Information Science, 2011.

xiv, 49 p. : ill. ; 30 cm.

Thesis (M.A.)–Central Department of Library and Information Science, Tribhuvan University, 2011.

Added Entry (Subject)

D LIBRARIES – AUTOMATION

025.00285 Pokharel, Reju

P756p Prospect of digital library in Nepal : a users' perspective / submitted by Reju Pokharel. – Kathmandu : Central Department of Library and Information Science, 2011.

xiv, 49 p. : ill. ; 30 cm.

Thesis (M.A.)–Central Department of Library and Information Science, Tribhuvan University, 2011.

Added Entry (Title)

D	Prospect of digital library in Nepal : a users' perspective
025.00285	Pokharel, Reju
P756p	Prospect of digital library in Nepal : a users' perspective / submitted by Reju Pokharel. – Kathmandu : Central Department of Library and Information Science, 2011.
	xiv, 49 p. : ill. ; 30 cm.
	Thesis (M.A.)-Central Department of Library and Information Science, Tribhuvan University, 2011.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ARL	:	Association of Research Libraries
ARPANET	:	Advanced Research Projects Agency Network
CD-ROM	:	Compact Disk- Read Only Memory.
CDS/ISIS	:	Computerized Documentation System-Integrated Set for Information Systems
DARPA	:	Defense Advanced Research Projects Agency
DLF	:	Digital Library Federation
ICSU	:	International Council for Science
ICT	:	Information Communication Technology
INASP	:	International Network for the Availability of the Scientific Publications
ISBN	:	International Standard Book Number
IT	:	Information Technology
MLISc	:	Master of Library and Information Science.
MPP	:	Madan Puraskar Pustakalaya
NASA	:	National Aeronautics and Space Administration
NHRC	:	Nepal Health Research Centre
NSF	:	National Science Foundation
OPAC	:	Online Public Access Catalogue.
PERI	:	Program for Enhancement of Research Information.
SSBL	:	Social Science Baha Library
TUCL	:	Tribhuvan University Central library.
WHO	:	World Health Organization
WWW	:	World Wide Web

Chapter 1

INTRODUCTION

1.1 Background Information

It is well recognized that libraries all over the world are undergoing transformation, especially owing to the development in information and communication technologies. Traditional libraries are changing to digital libraries and new libraries that are being set up are increasingly of the digital kind. As a result, there is widespread interest and consequently, a lot of research and development activities are being carried out in this area world over (Mahesh & Mittal, 2008).

We understand a digital library to be an electronic collection of real or virtual resources, which may also be available elsewhere. These resources must be whole works, with which humans can have a complete cognitive or affective engagement. A digital library may allow either online or offline access to the elements it organizes and houses, and may include multimedia as well as multilingual data.

Although accessible online, a digital library is not identical to a website or a portal. However, while portals, specialized websites and search engines cover a wide range of subject areas, digital libraries are more narrowly focused around one or a specific group of disciplines. Digital libraries, moreover, attach content specific and highly descriptive metadata such as, descriptors or keywords to describe each item in the collection. Therefore, searches in a digital library can produce more useful results, save time and effort in searching, and in the best of cases browsers may directly access the text or multimedia content for which they executed their search. There are several advantages of a digital library over a conventional library. These include minimizing storage space and cutting down costs of library maintenance and resource distribution. A digital library is also not merely an automated conventional library, where the resources are electronically catalogued and are available only for browsing purposes. Although conventional libraries do preserve socio-cultural ambiences within their spaces, a digital library can provide more equitable and widely distributed access at lower costs. Moreover, it may be most appropriate means of organizing intellectual artifacts that cannot be represented or distributed in printed formats, such as audio/video multimedia content. Thus a digital library may evolve into a complex

system that makes information available in hard copy, on magnetic tape and discs, CD-ROMs and videodiscs, including those from online sources.

The idea of easy, finger-tip access to information-what we conceptualize as digital libraries today-began with Vannenar Bush's Memex machine (Bush, 1945) and has continued to evolve with each advance in information technology. With the arrival of computers, the concept centered on large bibliographic databases, the now familiar online retrieval and public access systems that are part of any contemporary library. When computers were connected into large networks forming the Internet, the concept evolved again, and research turned to creating libraries of digital information that could be accessed by anyone from anywhere in the world. Phrases like "virtual library," "electronic library," "library without walls" and, most recently, "digital library," all have been used interchangeably to describe this broad concept. But what does this phrase mean? What is digital library? And what are the issues and challenges in creating them? Moreover, what are the issues involved in creating a coordinated scheme of digital libraries? It has been suggested that digital libraries will only be viable within such a scheme (Chapman and Kenny, 1996).

The availability of the Internet brings dramatic changes to millions of people in terms of how they collect, organize, disseminate, access, and use information. Perceptions of digital libraries vary and evolve over time, and many definitions for digital libraries have been proposed. The concept of a digital library means different things to different people. Even the key players in the development and use of digital libraries have different understanding of digital libraries. To librarians, a digital library is another form of a physical library; to computer scientists, a digital library is a distributed text-based information system or a networked multimedia information system; to end users, digital libraries are similar to the World Wide Web (WWW) with improvements in performance, organization, functionality, and usability (Fox, Akscyn, Furuta, and Leggett (1995). Borgman's (1999) two competing visions of digital libraries stimulate more discussions on the definition of a digital library by researchers and practitioners. The common elements of a digital library definition identified by the Association of Research Libraries (1995) are more acceptable to researchers of digital libraries:

- The digital library is not a single entity;
- The digital library requires technology to link the resources of many;
- The linkages between the many digital libraries and information services are transparent to the end
- Users;
- Universal access to digital libraries and information services is a goal;
- Digital library collections are not limited to document surrogates: they extend to digital artifacts that cannot be represented or distributed in printed formats.

The Digital Library Initiative I & II funded by National Science Foundation (NS) and other federal agencies have advanced the technical as well as the social, behavioral, and economic research needed to design and develop digital libraries. Millions of dollars have been invested into the development of digital libraries. Many unanswered questions related to whether users use them, how they use them, and what facilitate and hinder their access of information in these digital libraries. These questions cannot be answered without the evaluation of the existing digital libraries. We need to assess the usability of digital libraries in order to evaluate the full potential of digital libraries (Blandford & Buchanan, 2003). Moreover, user model of digital libraries and digital library model of users are different (Saracevic, 2004).

It is important to understand users' perspectives of digital libraries. In addition, needs assessment and evaluation is also essential for the iterative design for digital libraries (Van House, Butler, Ogle, & Schiff, 1996). Moreover, digital libraries are at the focal point of many different areas of research, and what constitutes a digital library differs depending upon the research community that is describing it (Nurnberg et al., 1995).

1.2 Statement of the Problem

Library, be it traditional or digital, aims at providing right information (content) in right time; now possible with the aid of technology. The right information in the right time, through digital library, is the most staggered one. Traditional libraries are being inefficient to cope up with the pressure of increasing number and the limited time of the information users. Traditional libraries could not cover varied informational resources which are regularly updated such as geographical, scientific,

economical, etc. information. Forms and formats of information is being born digitally which made digital libraries efficient to reduce the spatial, economical, time gap between the information producer and end user. Moreover, relevance and precision are the important factors in disseminating information which can not be met by the traditional libraries.

Nevertheless, digital library does have some challenges or problems. The optimism and hype from the early 1990's has been replaced by a realization that building digital libraries will be a difficult, expensive, and long-term effort (Lynch & Garcia-Molina, 1995). Creating effective digital libraries poses serious challenges. Some of the main problems of digital library are to evaluate how relevant the digital content is for the users and how far the users get their purpose met. In other words, it is very difficult to evaluate the relevance of the digital content served to the users. Similarly, it is also very difficult to find out whether the targeted users' needs are adequately fulfilled or not. Moreover, digital libraries are in nascent stage in Nepal having numerous challenges. However, the present study is mainly focused on the following research problems:

- What kind of information do the users seek from digital libraries?
- What is the condition of digital contents served by the libraries?
- Are the users' needs adequately fulfilled by the digital libraries?

1.3 Objectives of the Study

The main objective of the study is to evaluate the digital contents of the libraries in Nepal from user's perspective including the library visiting pattern of the users in fulfilling their demands. To be precise, the objectives of the study are as follows:

- To evaluate the needs of digital library users.
- To evaluate the digital content served by the libraries.
- To find out whether the targeted users' needs are adequately fulfilled or not.
- To provide recommendations, based upon findings, to improve the situation of digital library.

1.4 Scope and Limitations of the Study

The study has focused on the relevance of digital content housed in or served through a digital library to users. The study has been conducted inside the Kathmandu Valley with the sample of 4 libraries chosen purposively. The study was conducted from December 2010 to April 2011.

The main limitation of the study has to do with the extent to which the findings can be generalized beyond the samples studied. As, the study has been conducted inside the Kathmandu Valley with only 4 libraries taken purposively as a sample, which may not reveal the true picture of the libraries operating in Nepal as a whole. Thus, the sample size is too small for broad generalizations.

1.5 Significance of the Study

The digital library is emerging as an organization that extends the scope. Most of the library user love to navigate information in digital environment. This study will be a momentous to all the stakeholders (service providers, parent organization and users) to improve their status-quo. Thus, this study would help in the development of digital library in Nepal. Furthermore, it would also help to make understand different aspects of digital library so that libraries planning to migrate into digital library benefit from the findings of this study.

1.6 Definition of the Terms

- **Automated library:** Automation of library functions, computerized catalogue, circulation, acquisition etc. holding mostly in print form, a few electronic resources are housed. (Sometimes called hybrid library)
- **Conspectus**: A tool to enable libraries to describe their existing collection strengths and current collecting interests. It was conceived in 1979 in North America.
- **Content:** The informational resource housed in or served through a digital library; i.e. digital library collection.

- **Database:** Any systematically ordered collection of information, usually stored on computer files or on CD ROM. Data is generally structured so that it can be sought and retrieved automatically.
- **Digital librarian:** The librarian / human resource who is providing all or any of library functions using information technology or digital library environment.
- **Digital library:** Digital library is a computer based information system for acquiring, storing, organizing, searching distributing, and displaying digital materials for end-users' access. It is fully automated, all resources in digital form, high speed optical fiber LAN and access over WAN.
- **Digitization:** The process of converting information to a digital format.
- **Electronic library:** A library which has fully automated functions, CD-ROM, networking, resources in electronic form.
- **Information technology:** Electronic technologies for collecting, storing, processing and communicating information
- **Information:** the organized and processed data that conveys significant or specific meaning about something.
- **Library automation:** Use of computer based systems in libraries both for accessing information and for library management.
- **User:** The consumer / navigator of information.
- **Virtual library:** Library without walls provides access to resources. Library without resources—documents are not stored in any one location. They can be accessed and delivered from any work station. Library with little or no physical presence of books, periodicals, reading space, supporting staff but one that disseminates selective information directly to distributed library customers, usually electronically. It is an aggregate of libraries and electronic information resources because which are accessible electronically through personal computers; the focus of the virtual library being the individual users or their work stations.

1.7 Organization of the Study

The study has been organized in six different chapters. First chapter deals with the introduction of study, under which background of the study, statement of problem, objectives of the study, limitation of the study, significance of the study, definitions of terms and organization of study are incorporated.

The second chapter deals with literature review. Different books, articles, journals and past researches relating to the subject matter of this study have been reviewed in this chapter

The third chapter, focus of study, is mainly devoted for the understanding of the subject where the study is specifically and minutely presented on the aspects of digital library. Under this chapter, four digital libraries are focused.

Research methodology, research design population, sampling, procedure, data collection procedure and data analysis procedure are discussed in the fourth chapter.

Fifth chapter presents analyzed data, their presentation and interpretation to evaluate either the set objectives or hypotheses are positively met or not.

Sixth, the final, chapter deals with summary, conclusions and recommendations.

References

Association of Research Libraries (1995). Definition and purposes of a digital library. Retrieved from Association of Research Libraries (ARL) website http://www.arl.org/resources/pubs/mmproceedings/126mmappen2.shtml

Blandford, A. & Buchanan, G. (2003). Usability of digital libraries: A source of creative tensions with technical developments. *TCDL Bulletin*. Retrieved from http://www.ieee-tcdl.org/Bulletin/v1n1/blandford/ blandford.html

Borgman, C. L. (1999). What are digital libraries? Competing visions. *Information Processing and Management*, 35, 227-243.

Bush, V. (1945). As we may think. *Atlantic Monthly*, 101-108.

Chapman, S. and Kenny, A. R. (1996). Digital conversion of research library materials: a case for full informational capture. *D-lib Magazine*. Retrieved from http://www.dlib.org/dlib/october96/cornell/10chapman.html

Fox, E. A., Akscyn, R. M., Furuta, R. K., & Leggett, J. J. (1995). Digital libraries. *Communications of the ACM, 38*(4), 23-28.

G. Mahesh & Mittal, R. (2008). Digital libraries in India: a review. Libri, 58, 15-24. Retrieved from www.librijournal.org/pdf/2008-1pp15-24.pdf

Lynch, C. A. & Garcia-Molina, H. (1995). *Interoperability, scaling, and the digital libraries research agenda: a report on the May 18-19, 1995 IITA Digital Libraries Workshop*. Retrieved from http://www-diglib.stanford.edu/diglib/ pub/reports/iita-dlw/main.html

Nurnberg, P. J., Furuta, R., Leggett, J. J., Marshall, C. & Shipman III, F. M. (1995). Digital libraries: issues and architectures. In *Proceedings of the Second Annual Conference on the Theory and Practice of Digital Libraries* (pp. 147-153). Austin, Texas, USA: Hypermedia Research Lab, Computer Science Department, Texas A&M University.

Saracevic, T. (2004). *Evaluation of Digital Libraries: An Overview*. Presented at the DELOS Workshop on the Evaluation of Digital Libraries. Retrieved from http://www.scils.rutgers.edu/~tefko/DL_evaluation_Delos.pdf

Van House, N.A., Butler, M.H., Ogle, V., & Schiff, L. (1996, February). User-centered iterative design for digital libraries: the Cypress experience. *D-Lib Magazine, 2*. Retrieved from http://www.dlib.org/dlib/february96/ 02vanhouse.html.

Chapter 2:
REVIEW OF THE LITERATURE

2.1 Library

A library is a public institution or establishment charged with the care of a collection of books, the duty of making them accessible to those who require the use of them and the task of converting every person in its neighborhood into a habitual library goer and reader of books (Ranganathan, 1940). Thus, library is charged with the most enviable function of dispensing knowledge to the ignorant and the informed alike (Mittal, 1984). The use of the word library to denote a building, room, set of rooms in which a collection of books is housed and organized is also common (Khanna, 1994). The central mission of a library is to collect, organize, preserve, and provide access to knowledge and information. In fulfilling this mission, libraries preserve a valuable record of culture that can be passed down to succeeding generations. Thus, libraries are an essential link in this communication between the past, present, and future.

At one time, a library was regarded as a store house and books were meant for preservation (Kumar, 1987). During fifteenth and sixteenth centuries, it was not uncommon to have books actually chained to the shelves. Such chained books could not migrate from the shelves beyond the length of the chain. In fact, libraries were then regarded, not as organizations for furthering the use of books, but as institutions for preserving them (Ranganathan, 1931). A modern library, with a few exceptions is regarded as a service institution; its aim being to enable the users to make the most effective use of the resources and services of libraries. This type of library acquires material, processes it, and makes it available for use rather than preservation (Kumar, 1987).

2.2 Library Automation

Library automation refers to use of computers in library work including services (Sharma, 1990). Library automation can be of two types: stand-alone system and integrated system. Stand-alone system is basically meant to do only one specific function of the library such as cataloguing (i.e. creating the database of bibliographic

records) whereas integrated system can be used in the automation of different functions of library such as acquisition, cataloguing, circulation, etc.

Computers were engaged for working in library service in USA in 1950s in a very modest way. Dr. H. P. Luhn had organized computerized indexes in 1950s. Computers entered and found some place in American libraries during this decade. However, their use and application was very limited and restricted due to the high cost of hardware and non-availability of application software packages. During 1960s, the cost of hardware was slashed down and appreciable attempts were made towards development of library application packages. This led to increased use of computers in libraries and printing industries (Sharma, 1990).

Moreover, with the development in information and communication technology (ICT), libraries begin using their services for different works. One major change it has brought in libraries and information centers is the accessibility of library resources. Internet, a wonderful advent of ICT, has made the libraries accessible and searchable from a remote location and also helped in sharing of information including the information about the development and availability of different computer software for library use.

Internet is considered as a great information source to the academic and research community and also a great information tool to the library and information centers to supplement their information support to the user community (Jange & Sami, 2006). The Internet is a global network that links multiple networks, and through them, millions of individual computers around the world. It was developed from Advanced Research Projects Agency Network (ARPANET), a United States Department of Defense project in the late 1960s. Research, scientific, and academic communities around the world adopted the Internet first, with commercial use beginning in the late 1990s. Its history is short but the impact of the Internet has been enormous. The development of computers and Internet together produced the technological revolution of the late twentieth century. When the Internet became widely available in the early 1990s, libraries were already using computers for many daily activities (Wilson, 2006). Today, libraries are adapting to operate in a computerized environment. One of the most used Internet service is World Wide Web (WWW) by which the information in the Web's server is browsed. Now-a-days,

different software and computer programs are available on the Web for the use in library for different purposes and works; for daily routine works as well as for information storage and retrieval.

2.3 Digital Library

All conventional libraries basic functions focus on collection, organization and dissemination of information resources. Traditionally a "library is a place in which books, manuscripts, musical scores, or other literary and artistic materials are kept for use but not for sale". In effect, it is an institution oriented towards collections and custody, where people may make use of the facilities. Whereas a digital library is an assemblage of digital computing, storage and communications machinery together with the content and software needed to reproduce, emulate and extend the services provided by conventional libraries. In other words, a digital library is a computer-based system for acquiring, storing, organizing, searching and distributing digital materials for end user access. It is not just a collection of material in electronic form; it includes a browser interface and perhaps a virtual space and society. It requires less space and the data can be made available through communication networks to anyone anywhere, while facilitating searches with speed. The digital is not a single entity and as such is linked to the resources of many such collections.

The first use of the term digital library in print may have been in a 1988 report to the Corporation for National Research Initiatives. The term digital libraries were first popularized by the NSF/DARPA/NASA (National Science Foundation/Defense Advanced Research Projects Agency/National Aeronautics and Space Administration) Digital Libraries Initiative in 1994.

Phrases like "virtual library," "electronic library," "library without walls" and, most recently, "digital library," can all be used interchangeably.

The definition of digital libraries varies depending upon various factors and perspectives. From the infrastructural and technical perspective, digital library is defined as a library that "basically store materials in electronic format and manipulate large collections of those materials effectively. Research into digital libraries is research into network information systems, concentrating on how to develop the necessary infrastructure to effectively mass-manipulate the information on the Net"

(National Science Foundation, 1999). Seadle and Greifeneder (2007) refused to accept it as a total technological change that would replace the traditional library in the statement "Digital libraries are not replacements for traditional libraries. They are rather the future of traditional libraries, much as medieval manuscript libraries simply became a specialized and much revered part of the larger print-based that we have today". This definition asserts that traditional libraries with printed collection will remain the core of a library collection in future and digital collection will be a section of the total collection. Though prediction of the future of libraries may be laden with imperfection, in the light of the drastic technological changes and the enormity of information in digital form the idea of printed documents not being replaced by digital collection is hard to swallow. Seadle's statement also assumes that digital collection is a single entity that would be surrogates or replacements of printed document but "the digital library is not a single entity; the digital library requires technology to link the resources of many services that are transparent to the end users; Universal access to digital libraries and information services is a goal; Digital library collections are not limited to document surrogates; they extend to digital artifacts that cannot be represented or distributed in printed formats" (Association of Research Libraries,1995).

Leiner (1998) deemed Digital library as "the collection of services and the collection of information objects that support users in dealing with information objects available directly or indirectly via electronic/digital means. Similarly, Arms (1995) also felt that digital library is "a managed collection of information with associated services, where the information is stored in digital formats and accessible over a network". Leiner and Arms definition emphasized on access to services and on content, which is sometimes called collections or documents or information or information objects. Casting the scope wider, Waters (1998) defined digital libraries as "organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence overtime of collections of digital works".

Some of the features pointed out in the definitions of digital library may be listed as follows:

- A library that served a defined community or set of communities
- A conglomerate of multiple entities
- Library that incorporate learning and access
- Library that provide fast and efficient access, with multiple access modes
- A library with a collection which
    - Are large and persist over time
    - Are well organized and managed
    - Contain many formats
    - Contain objects which may be otherwise unobtainable

In defining digital library, various aspects of its characteristics have been put to fore. However, these characteristics are further extended on the basis of various authors and it may be summarized as follows:

- Digital libraries will also include digital materials that exist outside the physical and administrative bounds of any one digital library
- Digital libraries will serve particular communities or constituencies, as traditional libraries do now, though those communities may be widely dispersed throughout the network.
- Digital libraries will require both the skills of librarians and well as those of computer scientists to be viable.

For librarians, these characteristics, are the most logical because it expands and extends the traditional library, preserves the valuable work that they do, while integrating new technologies, new processes, and new media (Arms, 1995).

Traditional libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library is much lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Digital libraries do away with these fees.

- **No physical boundary**. The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available.

- **Round the clock availability**. A major advantage of digital libraries is that people can gain access to the information at any time, night or day.

- **Multiple accesses**. The same resources can be used at the same time by a number of users.

- **Structured approach**. Digital libraries provide access to much richer content in a more structured manner, i.e. we can easily move from the catalog to the particular book then to a particular chapter and so on.

- **Information retrieval**. The user is able to use any search term (word, phrase, title, name, subject) to search the entire collection. Digital libraries can provide very user-friendly interfaces, giving clickable access to its resources.

- **Preservation and conservation**. Another important issue is preservation - keeping digital information available in perpetuity. In the preservation of digital materials, the real issue is technical obsolescence. Technical obsolescence in the digital age is like the deterioration of paper in the paper age. Libraries in the pre-digital era had to worry about climate control and the de-acidification of books, but the preservation of digital information will mean constantly coming up with new technical solutions.

- **Space**. Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them. When a library has no space for extension digitization is the only solution.

- **Networking**. A particular digital library can provide a link to any other resources of other digital libraries very easily; thus a seamlessly integrated resource sharing can be achieved.

- **Cost**. In theory, the cost of maintaining a digital library is lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Although digital libraries do away with these fees, it has since been found that digital libraries can be no less expensive in their own way to operate. Digital libraries can and do incur large costs for the conversion of print materials into digital

format, for the technical skills of staff to maintain them, and for the costs of maintaining online access (i.e. servers, bandwidth costs, etc.). Also, the information in a digital library must often be "migrated" every few years to the latest digital media. This process can incur very large costs in hardware and skilled personnel.

2.4 Digital Libraries in Nepal

The concept of library entered in Nepal only during 19th century. In 1812 A.D., King Girwanyuddha Bikram Shah promulgated the royal ordinance for the organization and management of archival materials and books, and established a library known as "Pustak Chitahi Tahabil Library;" it was the most remarkable event in the library development history of Nepal (Pangeni, 2008). In those decades, British Museum was very active and was giving lively service in the western world. Nepali librarians like Pandit Kedar Nath, Khadga Ram Joshi, Megh Nath Rimal were busy on copying and preserving manuscripts at that decade while western world had taken speed on disseminating printed books and documents. Only after 1900, Nepal get modern library named after the Prime Minister Bir Shamsher called 'Bir Library.' The library was made rich in its collection by adding the books written by foreign writers. Bir Shamsher had appointed an Indian called Anikchandra Chatterjee as a librarian of the library. He consulted the manuscripts of the library and compiled catalogue of the books and classified them. The catalogue was printed in two volumes in 1905 A.D. Till the date; the western world had developed different cataloguing codes and indexing system too (Karki, 2002).

In Nepal, after the advent of democracy in 1951 A.D., along with other sectors, the library also started to develop to some extent (Dali, 1991). In 1957 A.D., Nepal National Library was established. Likewise, Tribhuvan University Central Library which is the largest library in Nepal was established in 1959 A.D. (Pangeni, 2008). Now, there are all types of libraries as public, government, academic, special, research, friendship and foreign mission, private libraries, etc. Compared to the libraries and information centers of other developed countries which have already revolutionized their services due to fast growing information technology, the libraries in Nepal are still working in traditional manners. They have not been able to provide even basic library services they are merely a store house of books (Dali, 1991).

We find many public/community libraries registered in Nepal; however, most of them exist only in name. Moreover, those which are functional are either poorly equipped and/or do not cater to the needs of a modern society. In fact, there is not a single modern public library in the country that caters the need of various sections of the society. Apart from different public and reference libraries which were established earlier, recently, schools, colleges, universities are also establishing their own academic libraries containing different text-books, reference books, and subscribed journals. New public libraries are being opened in the initiation of local people and assistance of NGOs. There are more than 600 public libraries in Nepal. There are many public/community libraries registered in Nepal, however, most of them exist only in name and are functioning poorly. "In fact, there is not a single modern public library in the country that caters the need of various sections of the society" (CDNLAO, 2008).

Though the latest technology has already penetrated the communication sector and library field, Nepal has not been able to take full advantages of it due to lack of sufficient trained manpower and technical know-how (Dali, 1991). Also, the history of digitization in Nepal is not so old. German Research Council under Nepal German Manuscript Conservation Project initiated the microfilming step only in around 2030 B.S. This project opened a new arena of digitization in Nepal. Most of the manuscripts, rare books and documents in Department of Archaeology have been microfilmed (Bhandari, 2008). In 1988, Annotated Health Science Bibliography of Nepal was prepared by Health Learning Material Centre of Institute of Medicine using CDS/ISIS. In 1990, Royal Nepal Academy of Science and Technology (RONAST; now NAST) implemented library automation system (Pangeni, 2008). The concept of digital library is in initial stage in Nepal and the knowledge and qualification is not affluent enough to develop the concept. The limitations for digitization in Nepal have been enlisted as, technical architecture, building digital collection, copyright, preservation, government/authority, staff, and users (Aryal, 2008). In the digital libraries of Nepal, the digitized information is preserved and provided services to the users on request inside the library either by microfilm reader or by computer database. The information is not made accessible to the global users (Vaidya, 2008).

References

Arms, W. Y. (1995). Key concepts in the architecture of the digital library. *D-Lib Magazine*. Retrieved from http://www.dlib.org/dlib/July95/07arms.html.

Association of Research Libraries. (1995). *Definition and purposes of a digital library*. Retrieved from Association of Research Libraries (ARL) website http://www.arl.org/resources/pubs/mmproceedings/126mmappen2.shtml

Aryal, B. P. (2008, March). *Challenges to establish digital library in academic institutions of Nepal.* Paper presented at the International Conference on Information and Knowledge Management, Kathmandu, Nepal.

Bhandari, K. M. (2008, March). *Digitization of local content: A panacea to achieve millennium development goals.* Paper presented at the International Conference on Information and Knowledge Management, Kathmandu, Nepal.

CDNLAO. (2008, October). *Country report: Nepal.* Paper presented at the 16th Conference of Directors of National Libraries in Asia and Oceania (CDNLAO) Meeting, Tokyo. Retrieved from http://www.ndl.go.jp/en/cdnlao/meetings/pdf/CR2008-Nepal.pdf

Dali, I. (1991, August). *Libraries and information centres in Nepal: CEDA library & documentation branch.* Paper presented at the Training Workshop for Documentation Network Members, Singapore. Retrieved from http://dr.ntu.edu.sg/bitstream/10220/2506/1/AMIC_1991_AUG26-29_09.pdf.

Jange, S. & Sami, L. K. (2006). *Influence of Internet on library and information centres of National Institutes of Technology in India.* Retrieved from http://nopr.niscair.res.in/bitstream/123456789/7483/1/ALIS%2053(4)%20184-197.pdf

Karki, M. (2002). History of library development in Nepal before 1951 A.D. *TULSSAA: A Journal of Library and Information Science, 2*(2), 1-8.

Khanna, J. K. (1994). *Library and society* (2nd rev. and enlarged ed.). New Delhi: Ess Ess Publications.

Kumar, K. (1987). *Library organization.* New Delhi: Vikas Publishing House.

Leiner, B. M. (1998). The NCSTRL approach to open architecture for the confederated digital library. *D-Lib Magazine*. Retrieved from www.dlib.org/dlib/december98/leiner/12leiner.html.

Mittal, R. L. (1984). *Library administration: Theory and practice* (5th ed.). New Delhi: Metropolitan Book.

National Science Foundation. (1999). *Digital Libraries Initiative: available research.* Retrieved from http://dli2.nsf.gov/dlione

Pangeni, Y. (2008). *Library automation system in government libraries in Nepal: A case study of Ministry of General Administration (MoGA) library.* Paper presented at International Conference of Information and Knowledge Management, Kathmandu, Nepal.

Ranganathan, S. R. (1931). *The five laws of library science.* Madras: The Madras Library Association.

Ranganathan, S. R. (1940). *Reference service and bibliography.* Madras: Madras Library Association.

Seadle, M. & Greifeneder, E. (2007). Defining a digital library. *Library Hi Tech, 25*(2), 169-173.

Sharma, S. K. (1990). *Fundamentals of library automation.* New Delhi: SS Publication.

Vaidya, B. (2008, March). *Digital library application and trends in Nepal and future.* Paper presented at International Conference on Information and Knowledge Management, Kathmandu, Nepal.

Waters, D. J. (1998). What are digital libraries? *Council on Library and Information Resources, 4*. Retrieved from http://www.clir.org/pubs/issues/ issues04.html.

Wilson, K. (2006). *Computers in libraries: An introduction for library technicians.* Binghamton NY: Haworth Information Press.

Chapter 3:

FOCUS OF THE STUDY

The study is carried out on the digital contents served by the libraries of Nepal from the users' point of view. So the subject focus of the study is on the digital contents served by the libraries of Nepal. Hence the focus of the study is on the digital contents of the following sample libraries:

- Nepal Health Research Council (NHRC)
- Tribhuvan University Central Library (TUCL)
- Social Science Baha Library (SSBL)
- Madan Puraskar Pustakalaya (MPP)

3.1 Nepal Health Research Council (NHRC)

The Nepal Health Research Council (NHRC) was developed as an example of commitment of Nepal Government (NG) Nepal to promote scientific study and quality research in health in Nepal. It started as Nepal Health Research Committee under the Ministry of Health, chaired by the Secretary of Health in 1982 A.D. (B.S. 2039). On 12 April 1991 (29 Chaitra 2047 B.S.), the committee was developed into the Nepal Health Research Council, a statutory and autonomous body as promulgated by the Nepal Health Research Council Act No. 29 of the year 1991 of NG. With the consent of the Council of Ministers pursuant of Article 129 of the constitution of the government of Nepal, 1990 enacted the NHRC

NHRC library was established with the purpose of providing research based health information. It is being utilized by the all health and related professionals involved in research activities. It serves as a repository for health research related information and resources. With the support from organizations like Maryknoll Fathers and Brothers, NHRC library has started to fulfill its purpose. The library uses HINARI (Health Internetwork Access to Research Initiative) widely in Nepal. The HINARI Programme, set up by WHO together with major publishers, enables developing countries to gain access to one of the world's largest collections of biomedical and health literature. More than 7,000 journal titles are now available to health institutions in 109 countries, areas and territories benefiting many thousands of health workers and researchers, and in turn, contributing to improved world health.

National Journals

- Journal of Institute of Medicine <http://nepjol.info/index.php/jiom>
- Kathmandu University Medical Journal <http://www.kumj.com.np>
- Journal of Nepal Medical Association <http://www.jnma.com.np>
- Journal of Nepal Pediatrics Society <http://www.nepjol.info/index.php/JNPS>
- Journal of Obstetrics and Gynecology <http://www.njog.org.np>
- Journal of Nepal Association for Medical Laboratory Sciences <www.namls.org>
- Nepal Medical college Journal <http://www.nmcth.edu/list_journal_articles.php>

(http://www.nhrc.org.np/)

3.2 Tribhuvan University Central Library (TUCL)

Tribhuvan University Central Library (TUCL) was established along with the University in 1959. It began with a collection of 1200 volumes of books. Now, the collection exceeds 350000 volumes of books. In addition, there are more than 25000 back volumes of periodicals. Over 450 titles of periodicals are received every year on subscription or as gifts. Many philanthropists and bibliophiles have contributed this library to grow into its present size. It is the largest library in the Kingdom in terms of space collection and the number of members.

Even though TUCL is an academic library established to support the teaching, study and research programmes of the university, it has extended its services beyond the limit of the university campus. Apparently, having no public libraries in the valley and respecting the need and sentiments of all the concerned, the TUCL started rendering services by offering memberships to the general public as well as to the foreigners residing in Nepal.

And in addition, the library also serves the government ministries & foreign diplomatic missions. Therefore, it functions also as a public library and to some extent as a National library.

Since 1965, the TUCL has also been working as the Depository Library in Nepal for the United Nations' Organization and other International Organizations' publications. A separate section UN Depository Collection section containing more

that 25,000 volumes has been set up to house the publications received from these organizations.

Since the beginning of January 2000, the library has also started functioning as the ISBN National Agency in Nepal to distribute International Standard Book Numbers for the books published in Nepal.

In addition to the usual Services, i.e., books circulation, Reference service and Special collections services, the TUCL also brings out Publications relevant to various subjects.

The library has maintained the traditional system of card catalogues for searching the materials. But in addition to this, since 1995, it has been providing in-house computer database searching facilities through OPAC (Online Public Access Catalogue) computer terminals to search the existing records of the library. The work of retrospective conversion of the card catalogues into computer records has yet to be done.

The Tribhuvan University Central Library being mindful of the University objectives and the expectations of the nation's intellectuals and the general public, enshrines the following items as its objectives and strives to attain them for the benefit of the nation and its people.

- To fulfill the teaching and research needs of the University.
- To provide materials both in conventional and e-formats and furnish an environment conducive to study & research.
- To encourage membership and promote information literacy, readership and life-long learning.
- To promote resource sharing, networking and exchange of databases.
- To provide documentation and information services and bring out relevant publications.
- To help develop libraries and promote standards, guidelines and best practices.
- To promote professional expertise in information management and conduct trainings in librarianship.

Tribhuvan Uiversity Central Library (TUCL) is the national coordinating institute for International Network for the Availability for Scientific Publication

(INASP). INASP, a programme under International Council for Science (ICSU) was established in 1992 to provide access to scientific information particularly to the developing nations.

Programme for the Enhancement of Research Information (PERI) is one of the important programmes of INASP. After PERI's implementation, Nepalese researchers, scientists, students, graduates, professors, scholars and all those interested in science and technology will have access to Full Text database of world's more than 25,000.00 high-quality scientific journals. Likewise, they will have a full access to contents, abstracts from 25,000.00 scientific journals.

The PERI has been introduced implemented in many countries to reduce the digital divide between the developing and developed countries.

INASP/PERI Free E-resources

- Acoustical Society of America (ASA)
- American Institute of Physics http://www.aip.org/pubs/
- Annual Reviews http://arjournals.annualreviews.org/
- Beech Tree Publishing http://www.ingentaconnect.com/content/beech
- British Psychological Society http://www.ingentaconnect.com/content/bpsoc
- Cochrane Library http://www.thecochranelibrary.com
- Edinburgh University Press http://www.eupjournals.com
- Geological Society http://www.lyellcollection.org/
- Mary Ann Liebert, Inc. http://www.liebertonline.com/
- NPG- Nature http://www.nature.com
- NPG-Palgrave Macmillan Journals http://www.palgrave-journals.com/pal
- OSA – Optical Society of America http://www.opticsinfobase.org/
- Oxford Journals (OUP) http://www.oxfordjournals.org/
- Policy Press Journals http://www.ingentaconnect.com/content/tpp
- Royal College of Physicians http://www.ingentaconnect.com/content/rcop/cm
- Royal Society http://www.royalsocietypublishing.org/journals
- Symposium Journals http://www.symposium-journals.co.uk/
- University of California Press http://caliber.ucpress.net
- University of Chicago Press www.journals.uchicago.edu

E-resources under eIFL.net

- BioOne www.bioone.org
- ProjectMUSE http://muse.jhu.edu
- Cambridge University Press www.cambridge.org

Other e-resources

- JSTOR www.jstor.org
- OARE (Online Access to Research Environment) http://www.oaresciences.org
- DOAJ (Directory of Open Access Journals) www.doaj.org
- Openj-gate: http://www.openj-gate.com 6947 Open Access Journals (4003 Peer-Reviewed)
- Online Book Page 35000 e-books http://digital.library.upenn.edu/books/ (http://www.tucLorg.np/)

3.3 Social Science Baha Library (SSBL)

Social Science Baha Library is a public library run by Social Science Baha, an independent, non-profit organization. The library was established in 2002 A.D. It is located at Battisputali, Kathmandu.

The library is solely a reading and reference collection. It does not operate on a lending basis. There is a well-lit, comfortable reading room, and access to the shelves is through the attending librarians. The reading room is equipped with computers to provide users with access to in-house and online resources.

The library's collection has been built up through purchases as well as substantial donation from a number of individuals and institutions. The more significant donors among institutions are Himal Association; Columbia University; Tozzer Library of Harvard University; Alliance Francaise, Kathmandu; and the Nepal country office of the World Bank. The list of individuals and institutions who had donated books to the library can be accessed here.

The Library continues to solicit and receive books as donations from within Nepal and abroad besides continuing with new purchases. All funds generated by the library through membership fees, photocopy charges, etc, as well as cash donations are set aside for the purchase of new books.

The Library has also made provisions for a system of 'permanent loans', whereby supportive individuals lend their collections to the Library on a permanent basis, on the understanding that the books would revert back to the owner should the Library ever cease to exist. Under this system, the most notable donation the Library has received is the entire legal collection of the late Sambhu Prasad Gyawali, former attorney general and law and justice minister of Nepal, and a long-term loan from George Varughese, a member of the Baha.

The Library offers the following resources to its users apart from its considerable book holdings:

- Complete materials for TU masters level Gender Studies
- Complete materials for TU masters level Sociology/Anthropology
- Selected Nepali newspapers from 2033 BS
- ELDIS

Online access to journals available at:

- African Journals Online
- Annual Reviews
- British Psychological Society
- Cambridge University Press
- Columbia International Affairs Online
- DELNET
- Economic and Political Weekly
- Edinburgh University Press
- JSTOR
- Mary Ann Liebert
- Oxford University Press
- Palgrave Macmillan Journals
- Project Muse
- Symposium Journals
- The Policy Press
- University of California Press
- University of Chicago Press

and other open access journals and journal databases (http://www.soscbaha.org/)

3.4 Madan Puraskar Pustakalaya (MPP)

The Madan Puraskar Pustakalaya (MPP) is the principal archive of books, periodicals, ephemera, including many other collections in the Nepali language. Since over five decades of establishment, it has been continuously engaged in collection and archiving of published materials in Nepali language.

The personal literary acquisitions of a Kathmandu schoolboy during the mid 1940s, later became the Madan Puraskar Pustakalaya in 1955 A.D. As the personal collection grew, it attracted gifts from several literary personalities, scholars and institutions of Nepal and India. The library now holds a unique collection of monographs, periodicals and ephemera which describes different aspects of Nepalese society, culture, history and Nepali literature of different periods. The library collection is rich in rare materials, which are very vulnerable for circulation. It is unique and different from usual libraries. The collections comprises newsletters, posters, pamphlets, banners, calendars, manuscripts, reports, manifestos, letters, sketches, photographs, negatives, film-footage, speeches, press releases, images of wall paintings, invitations, audio-records etc.

In 1956, the collection received an endowment from Rani Jagadamba Kumari Devi Rana. Madan Puraskar Pustakalaya was officially registered in 1985, under Organizations Registration Act of 1977. The foundations of the Library were even more secure when in 1986, it was gifted land and a building worth over NRs 10 million (about US$ 200,000) by that schoolboy, Kamal Mani Dixit, presently Chairman of the Library.

The main objectives of the library are to collect, preserve, catalog, and disseminate the information for the researchers or scholars. Hence, cataloguing of monographs and periodicals, and preservation of rare and endangered materials using microfilming and digitization are some of the regular activities of the library. The library also manages two of Nepal's most prestigious literary prizes, the Madan Puraskar and the Jagadamba Shree. (http://www.madanpuraskar.org)

Chapter 4:
RESEARCH METHODOLOGY

4.1 Research Design

The study has tried to evaluate the digital contents of the libraries in Nepal from user's perspective. There has not been any detailed information available regarding the digital contents in libraries of Nepal, hence, an exploratory research design has been used for the study, using questionnaire as the instrument for eliciting relevant information. Respondents (representatives of the sample libraries) were contacted personally to fill the questionnaires. The data collected from the questionnaires have been analyzed using different statistical tools like frequency distribution and percentage; and conclusions were drawn on their basis.

4.2 Population

The population of this study comprises all the libraries operating in Nepal. However, due to many constraints, the study is mainly focused in the libraries operating in the Kathmandu Valley. Also, there are very limited libraries having digital contents or operating as a digital library, so the libraries in Kathmandu Valley having digital contents were considered for the sample of the study.

4.3 Sampling Procedure

Non-probability sampling method has been used for the selection of sample. As per the nature of study, only those libraries having digital contents been considered to be selected as a sample of the study. Hence, the sample was selected purposively from the Kathmandu Valley considering quick access to them. Only 4 libraries were taken as the sample for the study, which are as follows:

- Nepal Health Research Council (NHRC)
- Tribhuvan University Central Library (TUCL)
- Social Science Baha Library (SSBL)
- Madan Puraskar Pustakalaya (MPP)

4.4 Data Collection Procedure

The study is chiefly based on primary data with few secondary data. The secondary data collection covers intensive library and Internet search for national and international literature and has been carefully reviewed as a part of this study.

For the collection of primary data, questionnaire method has been used. Structured questionnaire (see Appendix A) was prepared with the questions designed to get precise and definite information. Questionnaires were distributed to the concerned respondents in person and were duly received.

4.5 Data Analysis Procedure

The data collected during the study have been analyzed using different statistical tools like frequency distribution and percentage. Likewise, frequency distribution tables and pie-charts have been used for the presentation with their detail interpretation. Each data has been analyzed and interpreted as per the objectives of the study so as to make the study precise and clear.

Chapter 5:

PRESENTATION AND ANALYSIS OF DATA

5.1 Purpose of Library Use

The library users were asked a question to elicit information for their purpose of using the library and the responses are as follows:

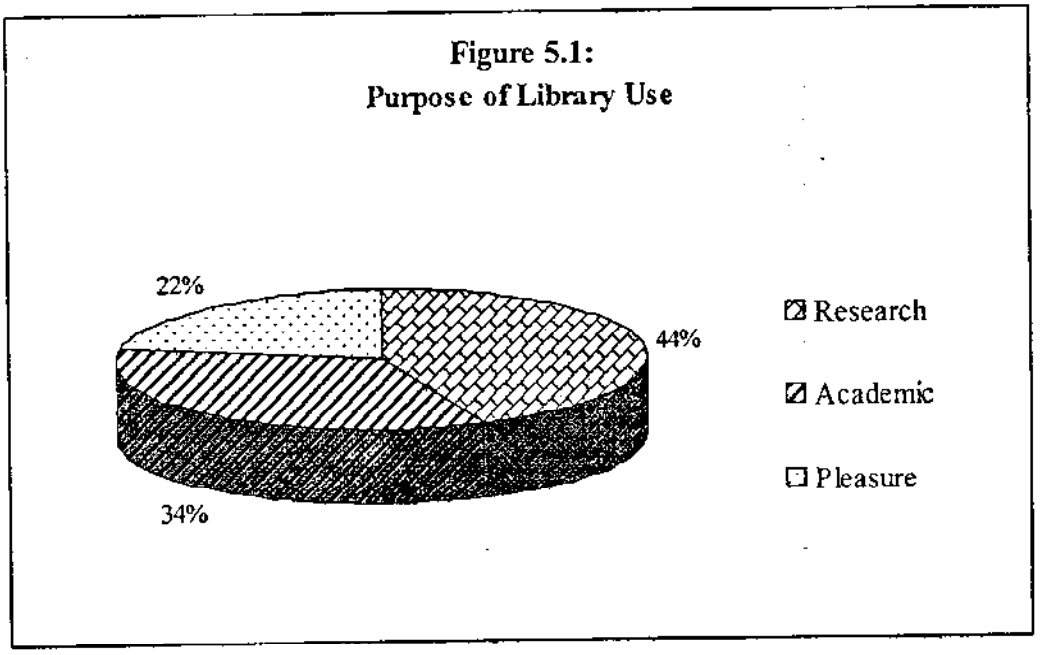
Table 5.1:

Purpose of Library Use

S.N.	Library	Purpose of Library Use			Total
		Research	Academic	Pleasure	
1	NHRC	7	3	2	12
2	SSBL	3	5	1	9
3	MPP	6	3	2	11
4	TUCL	6	6	6	18
	Total	22	17	11	50
	Percent	44%	34%	22%	100%

Source: Field Survey, 2010

Figure 5.1:
Purpose of Library Use



Out of total 44% of the library users said that they use it for research purposes, 34% said that they use it for academic purposes and the rest 22% use it for pleasure.

Among all the respondents in NHRC, 58% of them use this library for research purpose, 25% use the library for academic purpose and 17% use it for pleasure. Similarly, in SSBL, 33% use the library for research purpose, 56% use it for academic purpose and 11% use the library for pleasure. Likewise, in MPP, 55% use it for research, 33% for academic and 18% for pleasure purposes. Finally, in TUCL, 33% use the library for research, 33% for academic purpose and 33% respondents use it for pleasure.

5.2 Information Availability

Users were asked whether they get information they needed to meet their need and purpose by visiting library. The responses given by the library users are shown below:

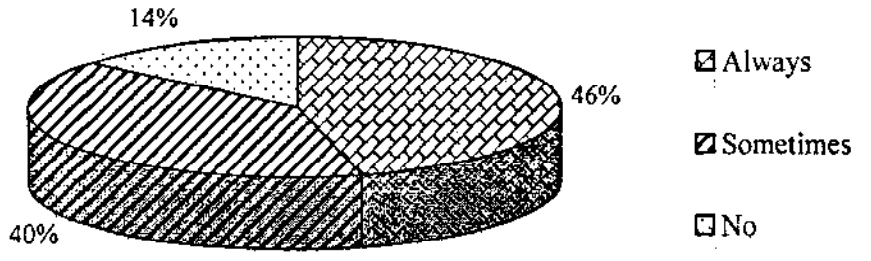
Table 5.2:

Information Availability

S.N.	Library	Information Availability			Total
		Always	Sometimes	No	
1	NHRC	3	9	-	12
2	SSBL	5	3	1	9
3	MPP	5	3	3	11
4	TUCL	10	5	3	18
	Total	23	20	7	50
	Percent	46%	40%	14%	100%

Source: Field Survey, 2010

Figure 5.2:
Information Availability



Out of total, 46% of the respondents always get the information as per their need and purpose, while 40% said that they sometimes receive the information they needed and the rest 14% are not satisfied with the information they receive.

Among the 12 library users in NHRC, 25% of them always get the information they needed, 75% sometimes get the information and there is no one who does not get any information. Likewise, among the respondents in SSBL, 56% always get the information they needed, 33% sometimes get the information and 11% do not get the information they needed. Similarly, in MPP, 45% always get the information they needed, 27% sometimes get the information they needed and another 27% do not get the information they needed. In the similar fashion, in TUCL, 56% always get the information they needed, 26% sometimes get the information they need, and the rest 17% do not get the information they need.

5.3 Nature of Digital Content

A question was asked to the users about what nature of digital content mostly they want from the digital library and their responses are shown below:

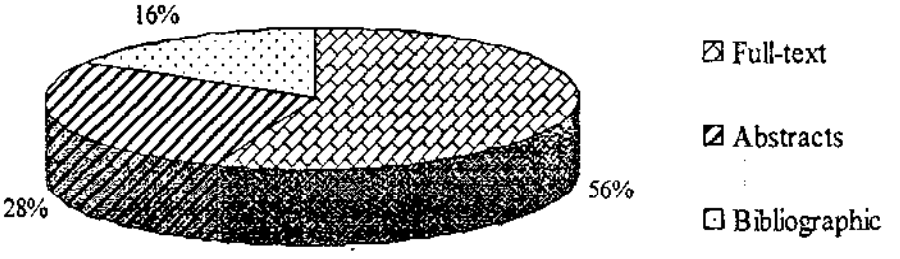
Table 5.3:

Nature of Digital Content

S.N.	Library	Nature of Digital Content			Total
		Full-text	Abstracts	Bibliographic	
1	NHRC	9	2	1	12
2	SSBL	2	7	-	9
3	MPP	8	-	3	11
4	TUCL	9	5	4	18
	Total	28	14	8	50
	Percent	56%	28%	16%	100%

Source: Field Survey, 2010

Figure 5.3:
Nature of Digital Content



In answer to the question, 56% of the respondents said that they want full-text content, 28% said they want abstract content and the rest 16% want bibliographic content from the digital library.

In NHRC, among the respondents, 75% said that they want full-text content, 17% said that they want abstract content and 8% want bibliographic content. However, there were only 22% who want full-text content in SSBL, while 78% want abstract content and none want bibliographic content there. Interestingly, there was no

one in MPP who want abstract content, while 73% want full-text content and 27% want bibliographic content. Among the respondents in TUCL, there were 50% respondents who want full-text content, 28% want abstract content and 22% want bibliographic content.

5.4 Relevance of Digital Content

The user's evaluation on the relevance of the digital information being served by the library was asked and the responses are as follows:

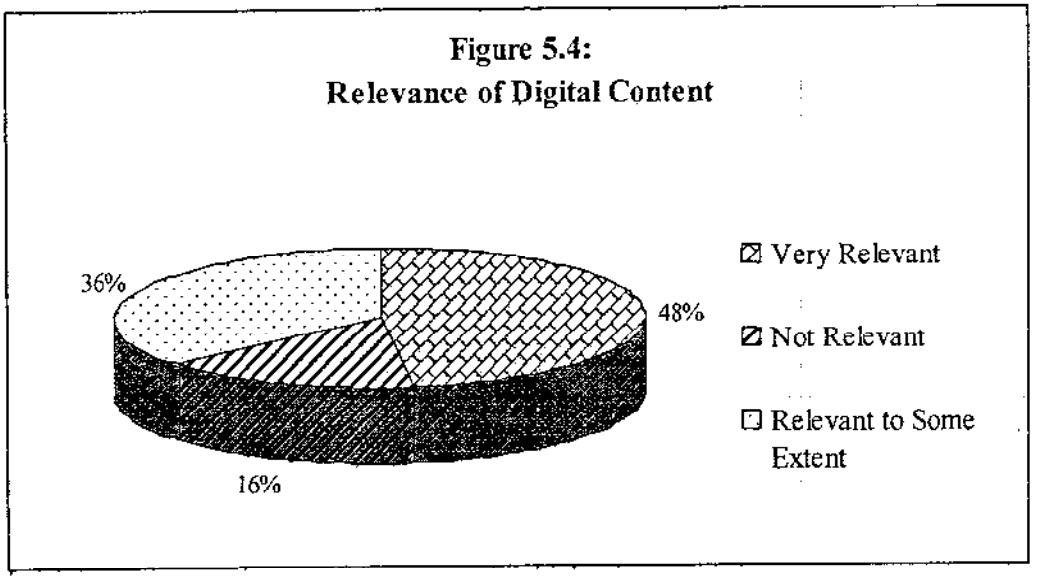
Table 5.4:

Relevance of Digital Content

S.N.	Library	Relevance of Digital Content			Total
		Very Relevant	Not Relevant	Relevant to some extent	
1	NHRC	6	-	6	12
2	SSBL	7	-	2	9
3	MPP	5	3	3	11
4	TUCL	6	5	7	18
	Total	24	8	18	50
	Percent	48%	16%	36%	100%

Source: Field Survey, 2010

Figure 5.4:
Relevance of Digital Content



In response to the question on their evaluation of the relevance of the digital information being served by the library, 48% of the respondents found the digital content of the library very much relevant, 16% of them found not relevant at all while 36% found relevant to some extent.

Among the respondents in NHRC, 50% said that the digital information being provided by the library is very relevant, and 50% of the respondents said it is relevant to some extent, and there was no one who has said that it is irrelevant. Similarly, among the respondents in SSBL, 78% said it is very relevant, and 22% said it is relevant to some extent with no one saying that it is irrelevant. In MPP, on the other hand, 27% of the respondents said that it is irrelevant, 28% said that it is very relevant and 27% said that it is relevant to some extent. In TUCL, among the respondents, 33% said that the information is very relevant, 28% said that it is not relevant and 39% said that it is relevant to some extent.

5.5 Scope of Digital Content

To evaluate the scope of digital content, a question was asked to the users whether the scope of digital content they received is adequate and varied or not in terms of subject matter and format, and responses are presented below.

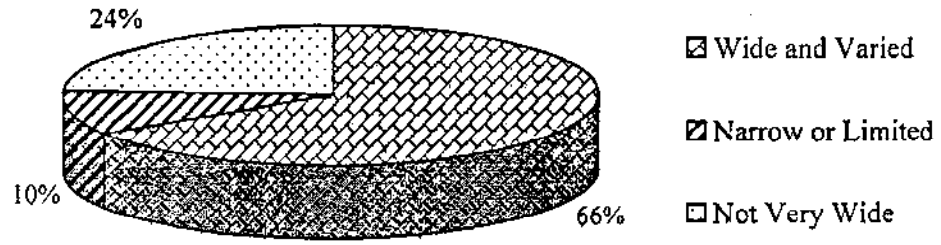
Table 5.5:

Scope of Digital Content

S.N.	Library	Scope of Digital Content			Total
		Wide and Varied	Narrow or Limited	Not very Wide	
1	NHRC	10	1	1	12
2	SSBL	5	-	4	9
3	MPP	2	4	5	11
4	TUCL	16	-	2	18
	Total	33	5	12	50
	Percent	66%	10%	24%	100%

Source: Field Survey, 2010

Figure 5.5:
Scope of Digital Content



According to the table and the figure, 66% of the respondents found the scope of digital content wide and varied in terms of subject matter and format, 10% of them found quite narrow and limited and 24% of them found not very wide.

Among all the respondents in NHRC, 84% said that the scope of digital content is wide and varied, and 8% said that it is narrow and limited and another 8% said that it is not very wide and varied. Likewise, among all the respondents in SSBL, 56% said that it is wide and varied and 44% thought that it is not very wide and varied. Similarly, in MPP, 18% said that it is wide and varied, 36% said that it is narrow and limited and 45% said that it is not very wide. Likewise, among all the respondents in TUCL, 89% said that it is wide and varied; no one thought that it is narrow and limited and 11% said that it is not very wide.

5.6 Availability of Updated Contents

A question was asked to users how often they have received updated digital contents for the library. The responses are as follows:

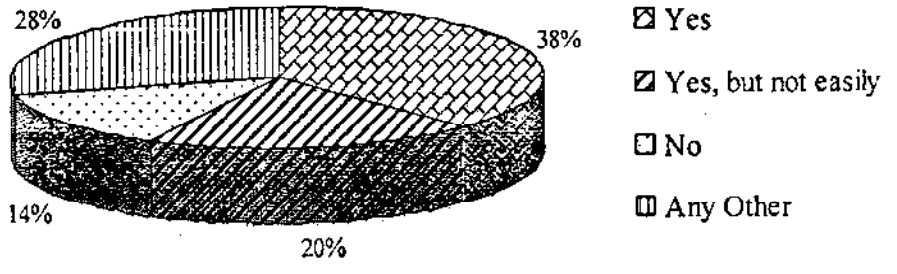
Table 5.6:

Availability of Updated Contents

S.N.	Library	Availability of Updated Contents				Total
		Yes	Yes, but not easily	No	Any Other	
1	NHRC	6	4	2	-	12
2	SSBL	5	-	-	4	9
3	MPP	4	-	2	5	11
4	TUCL	4	6	3	5	18
	Total	19	10	7	14	50
	Percent	38%	20%	14%	28%	100%

Source: Field Survey, 2010

Figure 5.6:
Availability of Updated Contents



As table and the figure show, in response to the question whether updated contents are available to users, 38% have given positive answers, 20% were positive but have said that they are not easily available, 14 percent of them said that updated contents are not available at all and 28 percent are not sure about it.

In answer to the question among all the respondents in NHRC, 50% said that updated contents are available to the users, 33% said that they are not easily available, and 17% said that they are not available. Similarly, among all the respondents in SSBL, 56% said that they are available, and there is no one to give any negative

answers to the question. Among the respondents in MPP, 36% said that they are available and 18% said they are not easily available. Similarly, among all the respondents in TUCL, 22% said that they are available, 33% are positive about the question, but said that they are not easily available and 28% said that they are not available.

5.7 Sufficiency of Digital Contents

A question to elicit the information on sufficiency of digital contents was asked to the users. The responses from them are as follows:

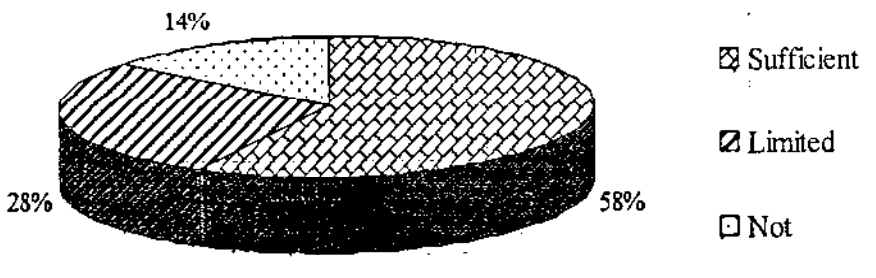
Table 5.7:

Sufficiency of Digital Contents

S.N.	Library	Sufficiency of Digital Contents			Total
		Sufficient	Limited	Not Sufficient	
1	NHRC	9	3	-	12
2	SSBL	5	4	-	9
3	MPP	8	2	1	11
4	TUCL	7	5	6	18
	Total	29	14	7	50
	Percent	58%	28%	14%	100%

Source: Field Survey, 2010

Figure 5.7:
Sufficiency of Digital Contents



As table and the figure show, 58% of the respondents said that they are sufficient, 28% said that they are limited and 14% of them said that they are insufficient.

Among the respondents in NHRC, 75% said that the digitals content available in the library is sufficient, 25% said that they are limited, and there is no one to say that they are not sufficient. Similarly, in SSBL, 56% said that they are sufficient, 44% said that they are limited with no one saying that they are not sufficient. Likewise, among the respondents in MPP, 73% said that they are sufficient, 18% said that they are limited and 9% said that they are not sufficient. Similarly, among all the respondents in TUCL, 39% said that they are sufficient, 28% think that they are limited and 33% said that they are not sufficient.

5.8 Fulfillment of Users' Demand

Users were asked with a question to elicit whether their demands on digital contents are fulfilled by the libraries and the responses are as follows:

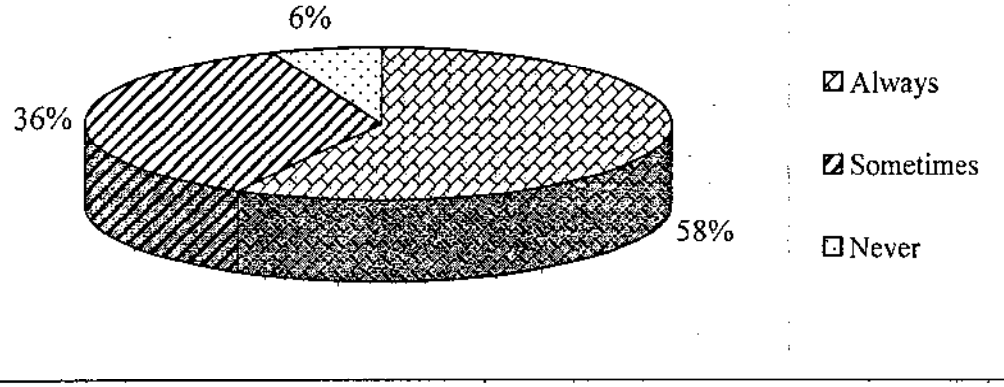
Table 5.8:

Fulfillment of Users' Demand

S.N.	Library	Fulfillment of Users' Demand			Total
		Always	Sometimes	Never	
1	NHRC	7	3	2	12
2	SSBL	4	5	-	9
3	MPP	6	4	1	11
4	TUCL	12	6	-	18
	Total	29	18	3	50
	Percent	58%	36%	6%	100%

Source: Field Survey, 2010

Figure 5.8:
Fulfillment of Users' Demand



58% of the respondents said that the libraries do not fulfill their demands, 36% said that they sometimes fulfill the demands and the rest 6% have said that they do not.

In NHRC, 58% said they their demands on digital contents are always fulfilled, 25% said that they are sometimes fulfilled and 17% said that they are never fulfilled. Similarly, when the same question was asked to the respondents in SSBL, 44% said that they always fulfill their demands and 56% said that they sometimes fulfill their demands. Similarly, among the respondents in MPP, 55% said that they do and 36% said that they sometimes do and 9% said that they never do. Likewise, in TUCL, 67% said that they always fulfill their demands, 33% said that they sometimes do and no one have said that they are never fulfilled.

5.9 Visits to Other Libraries

Users were asked whether they go other libraries to get the exactly same information that they search for in the library. The responses from them are as follows:

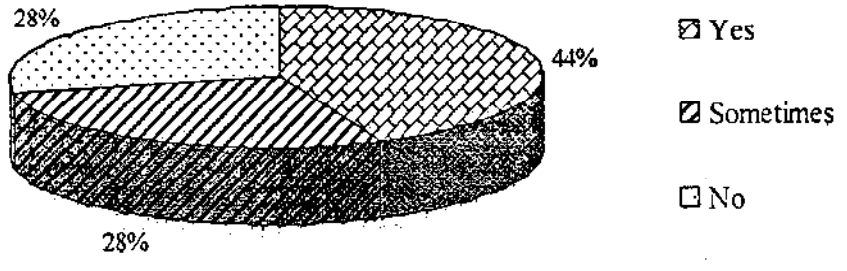
Table 5.9:

Visits to Other Libraries

S.N.	Library	Visits to Other Libraries			Total
		Yes	Sometimes	No	
1	NHRC	3	3	6	12
2	SSBL	3	5	1	9
3	MPP	5	2	4	11
4	TUCL	11	4	3	18
	Total	22	14	14	50
	Percent	44%	28%	28%	100%

Source: Field Survey, 2010

Figure 5.9:
Visits to Other Libraries



Above table and the figure show that 44% of the respondents said that they go to other libraries to get the same information that they search for in their library, 28% said that they sometimes do so, and the rest said that they do not go to other libraries for exactly the same information.

Among the respondents in NHRC, 25% said that they go to other libraries for exactly the same information they search for in their library, another 25% said that they sometimes do so and 50% said that they do not do so. Among the respondents in respondents in SSBL, 33% said that they do so, 56% said that they sometimes do so and 11% said that they do so. Similarly, among the respondents in MPP, 45% said that they go to other libraries for the same information, 18% said that they sometimes do so and 36% said that they don't do so. In TUCL, 61% said that they do so, 22% said that they sometimes do so and the rest 17% said that they don't go to the other libraries for exactly the same information they search for in their library.

Chapter 6:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary

As the main objective of the study was to evaluate the prospect of digital library in Nepal from the users' perspective, the research has been able to assess these objectives to some extent. In other words, the main purpose of carrying out this research was to evaluate the relevance of the digital content served to the users, to find out whether the targeted users' needs are adequately quenched or not. The study also tried to answer how relevant the digital content is for the users, how far the users get their purpose met. And at the end of the research work, most of the questions have been answered.

However, the study mainly focused on the digital contents served through the library to the users and the skills of librarians to operate technological devices for the functions of library. The research was carried out mainly in Nepal Health Research Centre (NHRC), Social Science Baha (SSB), Madan Puraskar Pustakalaya (MPP) and Tribhuvan University Central Library (TUCL). So the study is entirely based on the research carried out in NHRC, SSB, TUCL and MPP, and the study has covered the period from December 2010 to April 2011. A summary of the findings of the research are as follows:

- Most of the users (44%) use digital library for research purpose. Only few of them (22%) using it for pleasure and some of them (34%) use for academic purposes.
- Most of them (46%) think they always receive information they need to meet their need and purpose by visiting library, and some of them (40%) receive the information only sometimes while few (14%) are not satisfied with the information they receive.
- About the nature of the digital content, the highest numbers of respondents (56%) want full-text contents, some of them (28%) want abstract content and the rest (16%) want bibliographic content from the digital library.

- Similarly most of the respondents (48%) said that the digital content of the library is very much relevant; few of them (16%) said that it is not relevant and some of them (36%) said that it is relevant to some extent.
- To evaluate the scope of digital content, a question was asked to the users whether the scope of digital content they receive is adequate and varied or not in terms of subject matter and format. Most of them (66%) found the scope of digital content wide and varied in terms of subject matter and format. Only few of them (10%) found quite narrow and limited while some of them (24%) found not very wide.
- In response to the question whether updated contents are available to users, most of them (38%) responded in positive i.e. updated contents are available and few of them (14%) responded in negative so they think updated contents are not available at all while some of them (28%) are not sure about it.
- About the sufficiency of digital contents, most of the respondents (58%) said that they are sufficient; some of them (28%) said they are limited and only few of them (14%) of them said that they are insufficient.
- In answer to the question put to the libraries whether the library has fulfilled the users' demand; most of the respondents (58%) said that their demands are fulfilled always; some of the respondents (36%) think that their demands are fulfilled only sometimes while the rest (6%) said that their demands are never fulfilled.
- The users were asked a question to elicit whether they go other libraries to get the exactly the same information that they search for in the library. Most of the respondents (44%) said that they do, some of them (28%) said that they sometimes do and the rest (28%) said that they do not.

6.2 Conclusion

The digital library is emerging as an organization that extends the scope. Most of the library user love to navigate information in digital environment. In order to widen the scope of digital library environment, this study will be a milestone. Some of the conclusions as per the objectives of the study are presented below:

- Most of the digital library users in Nepal seek information for research purpose and they want full-text contents from the library.
- The digital contents served by the libraries are wide and varied in terms of subject matter with regular update.
- Most of the users always get information they needed and most of the digital contents are relevant as well as sufficient enough for the users. Thus, most of the users' demands are fulfilled by the library. But at the same time, most of the users do visit other libraries to get the exactly same information they search in one library.

6.2 Recommendations

The study revealed that there is a growing level of interest in digital contents from the library users of Nepal which clears the fact that there is a positive prospect of digital library in Nepal. However, there are few libraries operating as a digital library so, there remains a lot to be done in the field of digital library in Nepal. Some of the recommendations developed from the study are as follows:

- Libraries should be encouraged to use digitized documents with the focus on research materials.
- The digital contents of the libraries should be regularly updated so that users get the latest information.
- Digital library should disseminate the information according to the users' need and their suggestions and demands should be in high priority.
- Furthermore, knowledge on new technology and innovative activities should be recognized for their implementation in the library.

Bibliography

Association of Research Libraries (1995). Definition and purposes of a digital library. Retrieved from Association of Research Libraries (ARL) website http://www.arl.org/resources/pubs/mmproceedings/126mmappen2.shtml

Arms, W. Y. (1995). Key concepts in the architecture of the digital library. *D-Lib Magazine*. Retrieved from http://www.dlib.org/dlib/July95/07arms.html.

Aryal, B. P. (2008, March). *Challenges to establish digital library in academic institutions of Nepal.* Paper presented at the International Conference on Information and Knowledge Management, Kathmandu, Nepal.

Bhandari, K. M. (2008, March). *Digitization of local content: A panacea to achieve millennium development goals.* Paper presented at the International Conference on Information and Knowledge Management, Kathmandu, Nepal.

Blandford, A. & Buchanan, G. (2003). Usability of digital libraries: A source of creative tensions with technical developments. *TCDL Bulletin*. Retrieved from http://www.ieee-tcdl.org/Bulletin/v1n1/blandford/blandford.html

Borgman, C. L. (1999). What are digital libraries? Competing visions. *Information Processing and Management*, 35, 227-243.

Bush, V. (1945). As we may think. *Atlantic Monthly*, 101-108.

CDNLAO. (2008, October). *Country report: Nepal.* Paper presented at the 16th Conference of Directors of National Libraries in Asia and Oceania (CDNLAO) Meeting, Tokyo. Retrieved from http://www.ndl.go.jp/en/cdnlao/meetings/pdf/CR2008-Nepal.pdf

Chapman, S. and Kenny, A. R. (1996). Digital conversion of research library materials: a case for full informational capture. *D-lib Magazine*. Retrieved from http://www.dlib.org/dlib/october96/cornell/10chapman.html

Dali, I. (1991, August). *Libraries and information centres in Nepal: CEDA library & documentation branch.* Paper presented at the Training Workshop for Documentation Network Members, Singapore. Retrieved from http://dr.ntu.edu.sg/bitstream/10220/2506/1/AMIC_1991_AUG26-29_09.pdf

Fox, E. A., Akscyn, R. M., Furuta, R. K., & Leggett, J. J. (1995). Digital libraries. *Communications of the ACM, 38*(4), 23-28.

G. Mahesh & Mittal, R. (2008). Digital libraries in India: a review. Libri, 58, 15-24. Retrieved from www.librijournal.org/pdf/2008-1pp15-24.pdf

Karki, M. (2002). History of library development in Nepal before 1951 A.D. *TULSSAA: A Journal of Library and Information Science, 2*(2), 1-8.

Khanna, J. K. (1994). *Library and society* (2nd rev. and enlarged ed.). New Delhi: Ess Ess Publications.

Kumar, K. (1987). *Library organization.* New Delhi: Vikas Publishing House.

Leiner, B. M. (1998). The NCSTRL approach to open architecture for the confederated digital library. *D-Lib Magazine.* Retrieved from www.dlib.org/dlib/december98/leiner/12leiner.html.

Lynch, C. A. & Garcia-Molina, H. (1995). *Interoperability, scaling, and the digital libraries research agenda: a report on the May 18-19, 1995 IITA Digital Libraries Workshop.* Retrieved from http://www-diglib.stanford.edu/diglib/pub/reports/iita-dlw/main.html

Mittal, R. L. (1984). *Library administration: Theory and practice* (5th ed.). New Delhi: Metropolitan Book.

National Science Foundation. (1999). *Digital Libraries Initiative: available research.* Retrieved from http://dli2.nsf.gov/dlione

Nurnberg, P. J., Furuta, R., Leggett, J. J., Marshall, C. & Shipman III, F. M. (1995). Digital libraries: issues and architectures. In *Proceedings of the Second Annual Conference on the Theory and Practice of Digital Libraries* (pp. 147-153). Austin, Texas, USA: Hypermedia Research Lab, Computer Science Department, Texas A&M University.

Pangeni, Y. (2008). *Library automation system in government libraries in Nepal: A case study of Ministry of General Administration (MoGA) library.* Paper presented at International Conference of Information and Knowledge Management, Kathmandu, Nepal.

Ranganathan, S. R. (1931). *The five laws of library science.* Madras: The Madras Library Association.

Ranganathan, S. R. (1940). *Reference service and bibliography.* Madras: Madras Library Association.

Seadle, M. & Greifeneder, E. (2007). Defining a digital library. *Library Hi Tech, 25*(2), 169-173.

Sharma, S. K. (1990). *Fundamentals of library automation.* New Delhi: SS Publication.

Vaidya, B. (2008, March). *Digital library application and trends in Nepal and future.* Paper presented at International Conference on Information and Knowledge Management, Kathmandu, Nepal.

Saracevic, T. (2004). *Evaluation of Digital Libraries: An Overview.* Presented at the DELOS Workshop on the Evaluation of Digital Libraries. Retrieved from http://www.scils.rutgers.edu/~tefko/DL_evaluation_Delos.pdf

Van House, N. A., Butler, M. H., Ogle, V., & Schiff, L. (1996, February). User-centered iterative design for digital libraries: the Cypress experience. *D-Lib Magazine, 2.* Retrieved from http://www.dlib.org/dlib/february96/02vanhouse.html.

Waters, D. J. (1998). What are digital libraries? *Council on Library and Information Resources, 4.* Retrieved from http://www.clir.org/pubs/issues/issues04.html.

Wilson, K. (2006). *Computers in libraries: An introduction for library technicians.* Binghamton NY: Haworth Information Press.

Appendix A:

QUESTIONNAIRE

Prospect of Digital Library in Nepal: A Users' Perspective

Dear colleagues,

I am pleased to mention that I am writing my dissertatiion on "Prospects of Digital Libraries in Nepal: A Users' Perspective". I would therefore like to request you to fill in he questionnaire and return this form to me as soon as possible. I will remain grateful to you for your kind help and support.

With regards,

Reju Pokharel

Your name: _____

Designation: _____

Organization: _____

Please tick [√] any of the correct points/provide information.

1. What do you think is the main purpose of the digital content of this library?
   a. Pleasure reading
   b. Research work
   c. Academic
   d. Any other (please specify)_____
2. How do you get the content that meets the purpose stated above?
   a. Yes, always
   b. Yes, sometimes
   c. No
   d. Any other (please specify)_____
3. What kind of digital content do you want to go through?
   a. Full-text
   b. Abstracts
   c. Bibliographic database
   d. Any other (please specify)_____
4. How are digital content relevant for your purpose?
   a. Very relevant
   b. Not relevant
   c. Relevant to some extent
   d. Any other (please specify)_____

5. How do you assess the scope of digital content?

   a. It is wide and varied c. Not very wide

   b. It is narrow or limited d. Any other (please specify)_____

6. Are the updated contents available to users?

   a. Yes, they are c. Yes, but not easily

   b. No, Sometimes they are not d. Any other (please specify)_____

7. How sufficient are the available resources for your purpose?

   a. They are sufficient c. They are not sufficient

   b. They are very limited d. Any other (please specify)_____

8. In what way do you fulfill easily your demand on digital collection from this library?

   a. Exactly c. Never

   b. Sometimes d. Any other (please specify)_____

9. Do you visit any other libraries to get exactly the same information you searched for here?

   a. Yes, I do c. No, I don't

   b. Sometimes d. Any other (please specify)_____

Thank You.

Appendix B:

BIO-DATA

Name	:	Reju Pokharel
Date of Birth	:	27 Phalgun 2026
Sex	:	Female
Address	:	Budhanilkantha, Kathmandu
E-mail	:	rejupokharel@gmail.com
Contact No.	:	4376 906