

**LIBRARY AUTOMATION SOFTWARE PACKAGES
USED IN ACADEMIC LIBRARIES OF NEPAL:
A COMPARATIVE STUDY**

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR
ASSOCIATESHIP IN INFORMATION SCIENCE (2005-07)

SUBMITTED

By

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August, 2007

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Certificate

*This is to certify that the work reported in this dissertation entitled “**Library Automation Software Packages Used in Academic Libraries of Nepal: A Comparative Study**” was carried out by Sabitri Devi Sharma under our supervision and guidance for fulfillment of the requirements for the award of Associateship in information Science of NISCAIR, CSIR, New Delhi. To the best of our knowledge the work is original and has not been published before elsewhere or submitted to any other institution.*

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ACKNOWLEDGEMENT

I would like to express my heartfelt gratitude to all those who made possible the completion and bringing this dissertation to present state. My whole hearted thanks to my dissertation supervisor, Dr. M. Natarajan, Scientist, NISCAIR for his invaluable suggestions, guidance and time devotion which enabled me to complete the dissertation in time.

I am thankful to my external guide Mr. Manish Pokharel, Asst. Professor, Department of Computer Science and Engineering, Kathmandu University for providing me guidance to complete my dissertation.

I would like to express my gratitude to Dr. Govinda Prasad Sharma, Former Vice Chancellor, TU, Dr. Mahendra Prasad Shingh, Former Rector, TU and Gita Bhakta Joshi, Former Registrar for providing me opportunity to study in Delhi.

I am very grateful to Mr. Krishna Mani Bhandary, chief Librarian of TUCL who recommended me for AIS course in NISCAIR, New Delhi.

I am very thankful to Mrs. Renu Arora, Head of ETD, NISCAIR and all the faculty members of the AIS for their generous help on different occasion during my study.

I would like to express my debt of gratitude to SAARC Documentation Centre (SDC), New Delhi who funded me by providing fellowship for the study.

I got enough support and encouragement from my family, especially my father-in law who always give first priority to my higher studies. I can not express my gratefulness in words to my husband, who has been so gracious, understanding and motivating towards my course and took all family burdens to his shoulders during my study period.

Finally, my sincere gratitude to all my friends and well wishers for their kind help and co-operation in preparing this dissertation.

Sabitri Devi Shrama

PREFACE

This study presents a comparative assessment of the library automation software packages used in Nepalese academic libraries. It focuses on the evaluation of software on the basis of certain important checkpoints. It also highlights the importance of library automation, library activities and services.

Due to the enormous explosion of information, the quantity, variety and complexity of information is being increased rapidly in every field of knowledge. To control and dissemination of this overwhelming flow of information as well as to meet the requirements of the user community, a library professionals should apply the advanced technology in a library and information centers.

Computer technology and the availability of electronic databases have increased access to information at an exceptional rate. All academic libraries must strategically plan in order to meet the demands of patrons wishing to use new technology to access information from databases worldwide.

To automate library services efficiently and effectively one needs an integrated library automation package. There are several commercial library automation packages now available in the market. To offer the complete satisfaction of users and perform the library activities and functions, we must select competent and suitable software which can meet out our requirements. Therefore, librarians and information professionals must keep in mind some basic aspects before selection of library software.

Therefore, an evaluation of appropriate software packages is very much needed for any academic or other libraries for user friendliness, efficiency and cost effectiveness. Comparison provides us the basis on which to choose between alternative. So an evaluation is basically a judgment of worth.

However, software selection is a very complicated issue, on the observation of experts the discussion should be made by the selection committee for its suitability. This study will provide guidelines in the selection or development of appropriate software packages to Nepalese librarians.

The present study examines the ways which library automation software have changed the academic libraries in Nepal over the last few decades, and speculates about further changes to come.

The study has been divided in to nine chapters. Chapter one describes the background, objectives, library development in Nepal and scope of the study. It also includes the significance, limitations and methodology of the study.

Chapter second provides literature review of related topic published from the country and abroad. The knowledge and experiences of library professionals and specialists presented in documentary and electronic forms such as books, reports, articles, thesis, internet resources etc. are critically reviewed. The sayings and opinions of the experts are coated in different places according to their relevancy.

Chapter third presents the methodology of the study. It includes design, model of research process, population and sampling, sources of data, data collection procedure and data analysis procedure.

The fourth chapter provides library automation software: history and comparison and overview of library automation. It describes the kind, need and characteristics of library software packages. It also highlights the history of automation, its importance in modern library. The chapter presents the history of information technology in Nepal, Status of automation in academic libraries and why the freeware software is popular in Nepal. This chapter also describes the features and functions of good integrated library software which is very necessary for the effective storage and discrimination of information. It has also described the challenges of automation before the academic libraries.

The fifth chapter represents the general information of the academic institutions and their libraries.

The sixth chapter mentions the library automation software packages used in academic libraries in Nepal. It presents the detailed description of softwares such as CDS/ISIS, WINISIS, Alice for Windows, SOUL, Libinfo, LMS and MIDAS LMS

etc. and some other software such as LIBSYS, Greenstone, PhPMylibrary which are being introduced in these days.

The seventh chapter covers the selection criteria of library automation software. In the selection of the software following major aspects has been taken in to consideration: technology, features and functions, cost, supplier longevity, service and support, copyright & licensing considerations.

Data has been analyzed and presented in the eighth chapter. The chapter analyzed the software packages (AFW, SOUL, LibInfo, LMS and MIDAS LMS) used in Nepalese libraries. In the process of data collection, presentation and analysis, the opinions and remarks of professionals and experts views are also included.

To know the overall strength of the software, rating scale method has been applied. The result shows that Alice for Windows (AFW) is the best performer and is in the 1st competitive position.

Chapter nine has highlighted certain findings of the study and investigation, which are presented in summarized and concise form and it has recommended certain points for the improvements of the profession with some concluding remarks.

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ABBREVIATION

AACR-II	Anglo American Cataloguing Rule-2 nd edition
AFW	ALICE for Windows
CAS	Current Awareness Service
CCF	Common Communication Format
CDS/ISIS	Computerized Database System/Integrated Set of Information System
COBOL	Common Business Oriented Language
DDC	Dewey decimal classification
DLIS	Department of Library and Information Science
DOS	Disk Operating System
DRTC	Documentation Research and Training Centre
Gen ISIS	General Integrated Set of Information System
IAN	Information Access Network
ICIMOD	International Center for Integrate Mountain Development
IDRC	International Development Research Centre
INASP	International Network for the Availability of Scientific Publication
ISO	International Standard Number
IT	Information Technology
KUCL	Kathmandu University Central Library
KUSMS	Kathmandu University School of Medical Sciences
KUSOEd	Kathmandu University School of Education
KUSOM	Kathmandu University School of Management
LAN	Local Area Network
LIS	Library Information system
LMS	Library Management system
MARC	Machine Readable Catalogue
MEDLARS	Medical Literature Analysis and Retrieval System Services
NIP	National Information Policy

OPAC	Online Public Access Catalogue
OSS	Open Source Catalogue
PERI	The Programme for Enhancement of Research Information
PU	Purwanchal University
RAM	Random Access Memory
RDBMS	Relational Database Management System
RFID	Radio Frequency Identification
RONAST	Royal Nepal Academy of Science and Technology
SAARC	South Asian Association of Research Centre
SDI	Selective Dissemination of Information
SOUL	Software for University Libraries
SQL	Structured Query Language
TCP/IP	Transmission Control Protocol/Internet protocol
TITI	Training Institute of Technical Instructor
TUCL	Tribhuvan University Central Library
UGC	University Grant Commission
UKMARC	United Kingdom Machine Readable Catalogue
UNESCO	United Nations Educational Scientific and Cultural Organization
WAN	Wide Area Network
WECS	Water Energy and Commission Secretariat
WWW	World Wide Web

CHAPTER I

1. Background

Library is an indispensable organization of educated and civilized society. The increased growth, use and value of information generated the concept of information society or information oriented society “Libraries may not create civilization; but a civilization can not exist without them.” (**Hutchings, 1969**). In other words libraries are treated as the temple of learning where users can find out relevant information from the collection and services to satisfy the thrust of knowledge. But in present era the library has been define as an organization which identifies selection, collection, management, process and dissemination at the right time to the right person. Now libraries are perceived as places where information is retrieved through sources like electronic catalog listings, full-text periodicals and Internet access.

In the first half of third millennium BC, the well-known society, Babylonian town Nipur was found to have a number of rooms filled with clay tablets suggesting well stocked archives as a library. In Greece, the country of scholars got libraries with perishable materials such as papyrus and parchment. Rome and rulers on the other were fascinated to collect books in shelves. The innovation of printing press had really brought revolution on the production of documents, its dissemination and its use tool. Monasteries of Western world found books as an essential thing for the spiritual life. After 11th century when universities were established, the collection of information grew steadily (**New Encyclopedia, 1998**).

Although libraries have changed significantly over the course of history, they remain always responsible for acquiring or providing access to books, periodicals, and other media that meet educational, recreational and informational needs of their users. They continue to keep the business, legal, historical and religious records of a civilization. The trend of that time was to build collections. But in this era of specialization, the

efficiency and efficacy of libraries will be measured by the services provided by them not by the physical collection they have.

It is said that more new information has been produced in the last 30 years than in the previous 5000 years. Approximately, over 1000 books are published internationally every day and volume of all printed knowledge doubles every five years (**Reuters Magazine, 1997**). In addition, the vast amount of information is published in various electronic formats and astonishingly the internet has brought a revolution in information publication. “As of June 2002, the Google search engine indexed over two million websites. It is said that an estimated 25 new web pages go online every second” (**www.google.com**).

This overwhelming flow of information has made difficult to control and dissemination of library materials. Therefore, in order to avoid obsolescence of information; a library professional should apply the advanced technologies in order to meet the information requirements of the user community. The innovation of computer itself is the pioneer of radical changes in almost all fields. Once librarian was excluded in library underestimating his/her need for library services, but today still he/she is replaced but the story behind is different. The man made computer is main cause for replacing them in library. It would be better to say that the librarian and library services are assisted by computer hardware and software now. Library automation has become a burning issue, with pros and cons, among librarians throughout the world.

Because of its outstanding efficiency, performance and ability to handle large volumes of documents, the computer is gaining popularity in the field of librarianship and information services. Many library and information routines are being performed proficiently by computers. The computer has proved its success in the fields of library acquisition, cataloguing, classification, circulation, serials control, and information storage and retrieval activities. Many new services like SDI and current contents service also have been initiated with the help of the computer.

The utilization of computer and related techniques make the provision to provide the right information to right reader at the right time in a right form in a right personal way. Automation of library activities provides the services very efficiently, rapidly, effectively, adequately and economically. The modern libraries and information center facilitates free communication because access to information has become a fundamental right of the clientele.

The automation is economically feasible and technologically required in modern libraries to cope up with the requirements of new knowledge, the enormous increase in the collection of materials, problems of their acquisition, storage, processing, dissemination and transmission of information (**Bhardwaj & Shukla, 2000**). The capabilities of computer associated peripheral media and its application in library activities and services led to a highly significant quantitative and qualitative improvement especially in online technology. Library automation has multifarious aspects to be discussed but this study is limited to the status of library software being used in libraries of colleges and universities in Nepal.

The history of library automation is not a long one. It dates back to the 1950s and 1960s in America and Europe (**Malik**). In Nepal, library automation was introduced in the 1980s in some public or mission libraries but a number of academic and other libraries were familiarized in house keeping operations with computer during or after 1990.

The history of Library automation in Nepal can be traced back to the introduction of CDS/ISIS. Most of the academic libraries are using CDS/ISIS and WINISIS. Some database management software based on ISIS are also using in these days. Software for University Library (SOUL) has been introduced to the library automation in the Kathmandu University and Tribhuvan University Central Library (TUCL) has presently installed LibInfo. In recent days, new automation software packages are also developing in Nepal such as LMS, MIDAS, LibInfo, etc.

Reliable library software is highly recommendable for a modern library no matter whether it is Nepali, African or no part of the world can remain aloof to the overwhelming influence of the triumph of technology in the post-structuralist and post industrialist age (**Airy, 2000**).

Hundreds of library packages have been developed and run successfully in advanced countries and there are many directories and other tools available that help librarians to select suitable software for their libraries. But the situation in Nepal is unsatisfactory. Very few attempts have been made in the country and the use of library automation software packages in the academic libraries is of recent origin.

To offer the complete satisfaction of users and perform the library activities and functions, libraries must select competent and suitable software which can meet out the requirements or can be developed on contracted basis by any software company or can be developed by professional of the institution keeping in view the requirements of the library (**Bhardwaj & Shukla, 2000**). An increasing numbers of library software companies and their attractive advertisements propaganda confused the libraries which software is very much meet with their needs.

Software selection is a very complicated issue, on the observation of experts, a discussion should be made by the selection committee and most suitable in regard of flexibility, capacity, expandability, security, economic, user friendly modules based and updated with the latest technology is to be procured. Therefore, an evaluation of appropriate software packages is very much needed in any academic or other libraries for user friendliness, efficiency and cost effectiveness. The study will provide guidelines in the selection or development of appropriate software packages to Nepalese librarians.

Libraries cannot afford the cost of library automation as a whole. Librarians are not much trained in library automation as library schools and colleges do not prepare their

students for this challenge. Now-a-days, some colleges have included the subject of library science in their syllabi but there is no facility for practical knowledge on computerization.

Because of computer illiteracy, Nepalese librarians hesitate to automate their libraries and, if they have to do so, they cannot play an active role in the automation process. People do not appreciate the requisites of library automation like system analysis, consultancy, staff training and equipment maintenance. To overcome this problem there should be a provision of basic computer training as well as library oriented training programs. The most important people in making library computerization successful are librarians. They know their job well and should be most qualified to decide which function should or should not be computerized. It must be realized that librarians will not be able to make any use of computer equipment until they are provided with the know-how required to use it. So, before providing the equipment, it is necessary to make training arrangements for the professional development of librarians.

Another problem is the growing trend of software piracy in the country. Software developed abroad is not suitable for our libraries. Libraries that have been automated in the country have worked individually without having the benefit of the others' experiences.

Some organizations and associations, which can provide training and assistance in library automation, may also guide for software, hardware selection, and installation of software.

1.2. Historical Development of Library in Nepal

The history of libraries in Nepal can be traced as far as 1500 years ago (*Amatya, 2005*) Viharas (Monasteries) when scholars and students wrote their Buddhist and scientific scriptures, banners, tapestries and painted scrolls. These are still displayed to

the public in the month of Sravan. Even before this time there were Viharas in Nepal, where manuscripts were kept and people used to see and study manuscripts. In Kathmandu, there is an ancient manuscript written in gold- a very thick book consisting of one lakh verses in four volumes. Guthis or trustees looked after the use and preservation of the manuscripts. Thus there was the Vihara library system in ancient Nepal. There is another method of keeping and using old manuscripts which is the seasonal telling of Swosthani (story of Shiva) in the month of Magh, and Jatakabandhan and Swayambhu Puran (historical stories of Nepal) etc. in the month of Shravan.

Library service in its modern sense is a recent development in Nepal (**Amatya, 2003**). 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 decades while the western world had taken speed on dissemination printed books and documents. Only after 1900, Nepal got modern library named after the Prime Minister Bir Shamsar called Bir Library. Development in education and establishment of school, colleges, indeed enhanced the development of libraries in Nepal. During 1946, local public libraries were open to the public for the first time.

Then the libraries of the Malla King was established some six hundred years ago (**Amatya, 2005**). The illustrious Bir Library the manuscript library, which is now situated under the Clock Tower, Kathmandu, originated from this collection.

During the Rana period for a century, some nobleman or king had a passion for collection of books as their own private library in palaces are later shifted in Government and some prestigious library of the country.

The British Embassy started the service of British council Nepal in 1960. The technologies and services have been initiated in Nepal by the library. Later on other embassies in Nepal started such library service. Among them Indian library and

American Centre is well known. They are sharing culture and knowledge through the library. Tribhuvan University Central Library (TUCL) was established along with the University in 1959 as a first academic library in Nepal where the Department of Library and Information Science (DLIS) was established.

2. General Objective

- To identify different library automation software packages being used in academic libraries in Nepal for library management.

2.1 Specific Objectives

- To find out the salient features available in different software used in those libraries.
- To prepare a comparative study of different library management software packages.
- To provide a basic idea for selecting a suitable library automation software package

3. Research Questions

To develop effective strategies or the improvement of academic library status different types of general and specific questions are set as follows:

3.1 Research Questions [General]

1. Why Library Automation is not implemented in university/college libraries in Nepal?
2. Why open source/Freeware software is popular in Nepal?

3.2 Research Questions [Specific]

1. What are the general parameters to be considered in evaluating the Library software?
2. What are the obstacles in Library automation in academic institutions?
3. What are the different features between commercial and open source software?
4. Can academic institutions afford commercial software?
5. Does commercial software provide system that supports the technical and requirement changes?

4. Significance of the Study

With the development of library automation software packages, access to information and retrieval has become more convenient and efficient. There are hundreds of different Library automation packages available for library system developed by several vendors. It is of utmost importance for the library and information professionals to acquire knowledge on feature and functionality of these packages. This is a dire necessity at present since there is a great demand for librarians to develop library database, which is the first step in the automation projects. Therefore, provision of better understanding of library automation packages, will guide in the selection or development of appropriate software in the future. Guidelines on the evaluation of library automation packages play vital role. Therefore, studies and guidelines on the evaluation of these packages will definitely enable librarian to make the best decision when designing, acquiring and managing integrated library automation packages for the provision of online access to library resources to their users.

As standard library software is non-existent in Nepal, library co-operation, which is one of the remarkable achievements of automation, is becoming extinct with the passage of time.

5. Scope of the Study

This study covers library automation software packages being used in colleges and university libraries located in Kathmandu valley, Nepal. It identifies all the possible functions and requirements of a computerized library. It does not aim at in-depth knowledge of the software packages. Most of the libraries have started database creation of their holdings using CDS/ISIS software package but it is not sufficient to automate the library and few of the libraries are using proprietary/commercially available software packages. In the study, all the integrated modular library software packages presently being used in Nepalese libraries and can be used in future for library management have been studied and examined. The study is focused only on university and college libraries in Kathmandu valley where library automation is in use. There are six universities and one deemed university in Nepal, which are as follows:

1. Tribhuvan University
2. Kathmandu University
3. Purbanchal University
4. Pokhara University
5. Mahendra Sanskrit University
6. Sidhartha University and
7. B.P.Koirala Institute of Health Science (BPKIHS) - Deemed University.

It is aimed to study all the university libraries of Nepal and the library automation software which they have used for the organization of their information. But the study also planned to include some other college libraries because very few university libraries are automated.

It is observed that the following software packages are being used in academic institutions in Nepal.

- CDS/ISIS DOS and Window version
- Software for University Library (SOUL)

- Alice for Windows (AFW)
- MIDAS LMS
- LibInfo
- Library Management System (LMS)
- Library Manager
- PhpMyLibrary

6. Limitation of the Study

The first and foremost limitation of this study is the lack of information on this topic in Nepalese perspective. No one has conducted a research on this area just to create an authentic source of information for further investigation.

- The libraries which have no automation started are excluded in this study
- Libraries of colleges and Universities has been included

7. Methodology

The present study is done using a survey, through a well designed questionnaire and observation. Primary and secondary data has been collected. Qualitative and quantitative research has been applied as the research design for this study.

8. Organization of the Study

The study has been described as follows:

The first chapter deals with the background of the study, objective, Research questions, significance, Scope and Limitation of the study and methodology.

The second chapter presents review of literature published within and outside the country about development of library software, its evaluation and also about library automation.

Research methodology; Research design; population; sampling procedure; data collection procedure and data analysis procedure are discussed under the third chapter.

The fourth chapter is mainly devoted for understanding of the subject where the study is specifically and minutely presented. It is also known as focus of the study.

Fifth chapter highlights academic institutions and their libraries included in the study.

Chapter six has emphasizes the features of library management software packages used in Nepalese academic libraries.

Seventh chapter presents the selection criteria of library automation software.

Chapter eight represents the opinions and remarks of professionals and experts of library and information field. The opinions and remarks are collected through questionnaire and survey methods. Data are analyzed in this chapter under the heading, analysis and presentation. The chapter evaluates the set objective.

Chapter nine highlights the summary, findings and recommendations.

CHAPTER II

2. Review of Literature

In order to get the better understanding of the subject, it is essential and helpful to survey the literature and studies relevant and related to the topic. The review of such related literature provides the rationale for the hypothesis and findings. The purpose of this chapter is to facilitate a comparison of the findings of present investigation and study with those done prior to this.

Information technologies have led to the transformation of library services from traditional services such as card catalogs, printed books and periodicals, bibliographic instructions, in-person/face-to-face reference, to new services and delivery modes incorporating: electronic collections, such as e-books, e-journals and databases; virtual reference services, and other online services. Innovation of new services that are peculiar to the online/Web environment is the trend in modern electronic libraries (Moyo, 2004).

Although plenty of literature has been published providing the information about the names, features availability, cost etc. of the Library software packages, they hardly help librarians or information managers in the selection procedure, because they are not providing a comprehensive account on the software packages. Therefore, to fulfill the gap of literature on focused area, it attempts to study the books, journal articles, and other publications related to the library automation which deals with general aspect of library automation in international level. Most of the articles are found especially in Indian perspective. For instance, Mukhopadhyay (2005) In “*Progress of Management software: an Indian scenario*” discusses the development of library management software over the past decades. He draws out the characteristics and trends in progress of library automation software with special reference to packages available in Indian environment.

“*Granthalaya: A Library Automation Package*” by INSDOC discusses installation process, its salient features, module details, hardware/software requirements and directory structure. Granthalaya software is versatile and can be used in any type of library.

“*Comparative study of software available in the Indian market for library automation*” by **Patel and Bhargava (1995)** highlights the present Indian scenario of library automation. The author provides brief overview of some existing software packages like Archives, CDS/ISIS, DLMS, Golden Libra, LIBSYS, etc. Text retrieval and library management features, pros and cons, their implications in library environment, models and sub-modules are discussed.

2.1 Library Automation

Traditionally, Library automation is referred to the computerization of the entire library house keeping operations like acquisition, cataloguing, circulation & serials control. But today it is also referred to handle the large quantity of data and information more efficiently and quickly with the help of computers and other modern information technologies. According to **Bhardwaj and Sukla (2000)** library automation is generic term used to denote the various activities with an improving quality of products and services of library and information centers. It enhance the speed, productivity, adequacy and efficiency of the library professional staff and save the manpower to avoid some routine, repetitive and clerical tasks such as filing, sorting, typing, duplication checking etc.

Library Automation an Overview by **Rashid (1996)** reviews the significant developments in the area of library automation, size, library management system, and information retrieval system, OPAC, CD-ROMs and networking. Further he added that librarians and vendors are working together to improve service and systems and develop new products in response to user needs.

Vaishnav, and Bapal, (1995) deals in the article *Library Automation: A feasibility Study* with library automation programme of BAMUL Aurangabad. It identifies the problems in the existing system and gives reasons for automation. The study points out the requirement of library automation and discusses the technical, social and economic aspects of library automation in detail.

The literature on library automation has gone multifarious, whilst in the past it was mainly concentrated on traditional housekeeping functions and now it has expanded on the library management systems to incorporate OPAC, CD-ROMs, networks, desktop publishing, office automation, etc. There is hypermedia, multimedia, virtual reality, etc. (**Rashid, 1996**)

Bhardwaj and Shukla (2000), in the article *A Practical approach to library automation* discusses the aims, objectives and need for the change of library tools and technique under the changing environment with the concepts of automation of library activities, areas and services such as acquisition, database management, classification and cataloguing circulation, serial control, information retrieval, communication networks, and documentation services etc.

Concept of library automaton and multimedia is discussed by **Singh (1998)**, in his article “*Compatibility of library automation software package with multimedia*”. He stated that a library automation software package having compatibility with multimedia should be the choice of libraries and information centers thinking of 21st century information handling. According to him, library automation involves total computerization of library activities starting from acquisition, to management and circulation to reference service. Library technology involves the use of Xerox machines and barcode reader to electronic security gate. If the software supports some of these technologies then it has compatibility with multimedia.

Sinha and Satpathy (2004), in “*Library Automation and Networking for Managing Library and Information Services*” reveals the history of library automation in brief. It

traces the establishment of networks and use of information technology in library services in Indian scenario. The article reviews what library automation is and why it is needed and the areas of library automation and networking. It concludes that the success of library automation and networking depends mainly upon the proper planning and appropriate decision taken by the authorities from time to time.

2.2 Selection and Evaluation of Software

The market of library automation software package is unstable and subject to rapid expansion and contains growing diversity of microcomputer products. Software for library automation has to be decided before the selection and procurement of hardware. Infact, every librarian and information officer should keep in mind the requirement of the library automation and fitness of software for their purpose. Then he should select such software which should fulfill his requirements and also compatible with the future technology and multimedia. In this regard, **Rowley (1993)** proposed a strategy for selection and evaluation of library automation software. He suggested the criteria included certain factors like cost, history, originator, supplier, services, functions, support, maintenance, technical consideration and capability, ease of use and interface integration.

Malwad (1995), in the article "*Selection Criteria for Library Automation Software*" discussed the software packages, which are available in the market for a wide range of applications including library house-keeping operations, and information storage and retrieval. Their capabilities differ, prices vary and their versions keep on changing. Selection of suitable software package is an important factor in library automation system. The selection is based on specific needs of the institution, its environment, budget, user's aims and objectives.

Criteria for evaluation of library software packages" by **LISWiKi** highlights the procedure, features and aids to evaluate software packages. He considered an evaluation is basically a judgment of worth. Further he added the ability to evaluate

the return on our investment gives us the basis on which to choose between alternative. It is a matter of comparison of actual result with external standard, in the light of existing institutional realities which may be relevant to evaluating the future trajectory of the program or services and provide an objective basis for decision making.

Joint (2006), in his article "*Evaluating library software and its fitness for purpose*" provides a conceptual paper based on existing software evaluation models. The main purpose is to adapt general principles used for evaluating software quality to more specific requirements characteristic of information retrieval and educational applications in library environments. It also provides a model of software quality which embraces a number of top level factors. These are functionality, reliability, usability, efficiency, maintainability and portability.

Bhardwaj and Sukla (2000), in the article "*A Practical approach to library automation*" discusses that software selection is a very complicated issue, on the observation of experts. The discussion should be made by the selection committee and most suitable in regard of flexibility, capacity, expandability, security, economically, user's friendly, module based and updated with the latest technology is to be procured. He further discusses the leading names of the software packages with its features which are available in the market.

Muir (2005), in his article "*An introduction to the open source software issue*" traces the issue on Open Source Software (OSS). He described features and utilization of open source software and what is happening with OSS applications in universities and other libraries in the western world like USA, Canada, Newzeland etc. According to this article, OSS allows programmers to alter the software and redistribute it, with the requirement that they make these changes available to other developers.

Joos (1997), discusses in article "*LIBSYS: A solution for library automation and networking*" about the future developments of LIBSYS software and has given some

points to be considered while selecting the software such as simplicity in use, user base, regional applicability, networking capabilities and local support.

Adeniran's (1999), "*Library software in use in southern Africa: a comparative analysis of search engines, database fine-tuning and maintenance tools*" studied all types of libraries in the following countries: Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland and Zimbabwe. This study identified 29 software packages from 22 per cent usable survey returns. The study examines the various search engines, facilities to modify or fine-tune preset database structure, import and export facilities, and other tools available on all off-the-shelf packages in the region. The operating environments and modes are also examined. Software designers in developed countries have created a variety of applications for library and documentation work. The cost of development and maintenance of software can be very high and the libraries have to pay a large amount of money to automate their procedures. Realising this dire need of libraries in developing countries, the Netherlands government decided to take the initiative to develop a library software package within a developing country.

Mahmood (1998), in his article "*the development of the LAMP (Library Automation and Management Program) software for use in developing countries and its marketing in Pakistan*" describes the features of integrated library software developed in Pakistan under a project funded by Netherlands. The software called LAMP, has been developed to cater to the library automation needs of developing countries and is based on CDS/ISIS. The author suggested a marketing plan for LAMP. It analysis the marketing situation, divides market into segments, presents SWOT (Strength, Weakness, Opportunities, Threats) analysis and suggests a market mix (Product, Price, Place and Promotion) for marketing of the software in Pakistan as well as in other countries.

Constant up-gradation in technology is essential for survival and success. Otherwise there arise certain technical problems in coping up with the new technologies.

Ramesh (1998), in the article *“Technical problems in University libraries on Automation-An overview”* described that in order to provide efficient library service to the enlightened readers of the present day world, it is essential that the technical services of a library should be well organized with proper demarcation by making use of recent applications for fast and quick service to the users/readers.

The services like acquisition, cataloguing, circulation etc., discussed the traditional methods of management of technical services employed prior to automation and also notices the tremendous changes in the infrastructure of library technical problems that has arisen in making them most effective and useful in university libraries in the light of information technology.

“Constraints for evaluation of acquisition operations and supplier performance using LibSys” by **Mandal and Jeevan (2006)**, have discussed the practical problems faced by collecting data from the LibSys package to evaluate the acquisition system and book suppliers in the Central Library of IIT, Kharakpur. The paper also attempted to highlight the importance of customer specific reporting options in library automation packages which gather qualitative aspects of a library system using the quantitative data assimilated from the different house keeping operations. They highlighted the importance of suitable provision in automation packages for evaluating the performance of different sections of library and its various stake holders.

Review of Articles in Nepalese Context

It is found that the literature in the field of library software packages being used in Nepalese libraries is not available so far, especially on their need, kind, characteristics and suitability. However, there are some important works going on Master Degree Dissertations on library automation and application of IT in different libraries in Nepal.

Aryal (2006), in his article “*Library automation in Kathmandu University*” described the application of SOUL in Kathmandu University and highlighted its suitable and flexible features and modules for automating any type of libraries. Further he discussed the circulation and transaction works has been systematic and fast with the implementation of barcodes in all its collection.

“*Need of Library automation in the British council*” by **Sakya (1996)**, highlights the meaning and core modules of library automation systems and why automation is important in modern library for their efficiency and efficacy.

Airy (1999), in “*Preparing Thesis Bibliography with Reference to Health Literature 1995-1998 using the software CDS/ISIS*” explains “the latest trend of library profession is not a huge collection of books but of paperless library’ and up-to-date library instead of being document – rich thrives to be access – rich for access to information, computer with good library software is an essential tool to be used”. It will be better decision to automate all the library services in fact because library automation will result in greater accuracy, speedy processing, networking, sorting and printing, better use of reading materials, ease of use, bibliographic controls, quality service, reputation of library.

Shrestha (2000), presents a cursory assessment of the CDS/ISIS software in “*Preparation of bibliographic index on serial article of health science literature with reference to CDS/ISIS software package*”. It focuses on the preparation of bibliography with theses as a bibliographic level. It also highlights upon the importance of library automation. **Pradhan (1995)**, discusses data files, data elements and example of CDS/ISIS Pascal required for acquisition, cataloguing and circulation systems of library are given various programs needed to develop these systems and check points of the same are also mentioned.

CHAPTER III

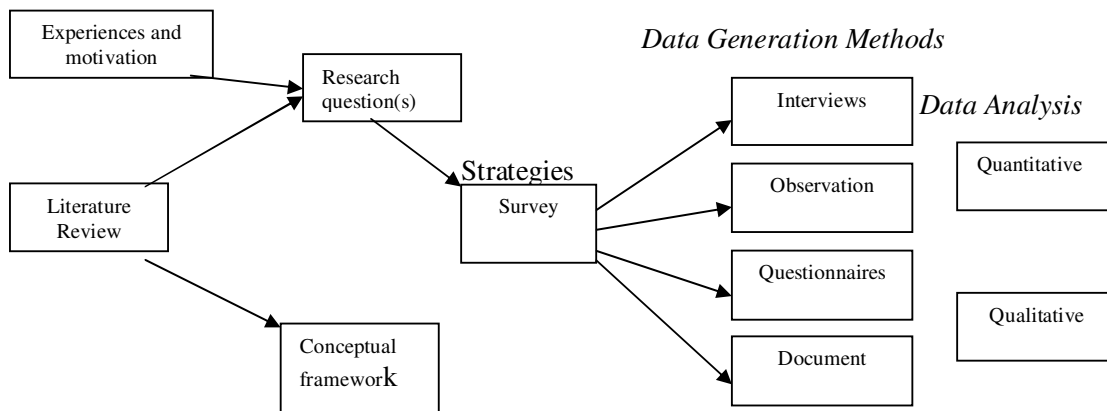
3. Methodology

Basically, research is described as an active diligent and systematic process of inquiry aimed of discovering, interpreting and revising facts. The term research is also used to describe a collection of information about a particular subject too. So, the application of procedure for research is known to be research methodology. One can also define research as a scientific and systematic search for pertinent information on a specific topic (Kothari, 1989).

3.1 Research Design

Research design is a plan, structure and strategy of investigation conceived so as to obtain answer to research questions and to control variance. This present study has conducted mainly two aspects, qualitative and quantitative research. Since one single method of data collection is not suitable for the study and investigation of the subject. Hence a combination of different method is being used to collect the relevant facts, figures and data. The methods mainly used are structured questionnaires, survey and direct interviews with concerned peoples. In some cases, data is collected through telephone contact, similarly, personal contact with concerned authorities (mainly librarians/ information officers and software builders and also software distributors).

3.2. Model of Research Process



3.3 Population

The population of study was libraries that are computerized or used computers for library automation. The research specially focused on University and college libraries. In this study the population is not an individual one, but the library and their librarians of Kathmandu University, Tribhuvan University, Public Youth Campus, Apex College, Institute of Engineering, Nepal Medical College, and Training Institute of Technical Instructor (TITI).

3.4 Sampling

The libraries of University, constituent campuses, affiliated colleges, and private colleges situated at Kathmandu, which have automation, are selected as the sample institutions for present study and investigation. The main purpose of the study is to find out which software is used in concerned library and evaluate the software for its suitability. Only thirty questionnaires have been distributed in selected libraries to collect the data and all were collected.

3.5 Sources of Data

Primary and secondary data has been collected. Primary data includes original documents on the library software and the interviews with librarians. The original document includes annual and special conferences, trade literature and relevant World Wide Web sites.

Secondary data includes reports, monographs, dissertations, books, directories, and encyclopedia manuals, leaflet etc. were consulted. Relevant theoretical works on the evaluation and comparison on library management software packages were also consulted. Survey of concerning libraries and information centers were taken place.

3.6 Data Collection Procedure

3.6.1 Questionnaire Method

Questionnaire (Annexure-I) has been prepared for the purpose of survey and collecting the necessary information to complete this work. While designing the questionnaire, due care was taken to make it comprehensive by including all the aspect without sacrificing its simplicity and objectivity. Both 'open ended' and 'closed' or 'fixed' questions contained the questionnaire. The questionnaire has covered all the important aspects of the software from both user side and software side included. Also holding details of each library and services that are being provided in the library has been taken in to consideration, so as to see the usefulness and capability of the software in handling the number of records.

The questionnaires have been sent to the librarians of the selected universities and campuses. Most of the questionnaires had been collected within one or two weeks but in few cases when no responses was received after long time, the librarians were personally contacted and over telephone, Personal visits were made for reminding and collecting the filled up questionnaire

3.6.2 Interview Method

Structured and unstructured interviews have been conducted with knowledgeable librarians in software packages, professionals, core professionals for gathering concerned data, facts and figures. Among all the method, interview method was very useful in the study of completion of information which was left at the time of filling of questionnaire.

3.7 Data Analysis Procedure

The data in the form of questionnaire have been collected, edited, and classified for data analysis. All those collected data was aggregated in to a form that presented the summary of answers from respondents.

Both qualitative and quantitative data collected during the field work and obtained from other secondary sources has been used to interpret the data. The data has been broadly categorized according to the research objectives. Qualitative data has been analyzed descriptively. Collected data were analyzed and interpreted in a systematic way, mainly characterizing in various headings and sub-headings for the fulfillment of research goal.

To evaluate the competitive strength of the software, rating method has been used for comparative study of the software while analyzing the data.

CHAPTER IV

4. Focus of the Study

This chapter is divided into two sections. The first section provides the basic introduction, types of software and different kinds of software packages used in libraries while the second section covers on library automation.

4.1 Library Automation Software: History and Comparison

Due to the vast explosion of information, the librarians are facing difficulties to meet the user demand and are forced to take up the task of systematic organization of the recorded knowledge. On the other hand, the computer programs are being very much advanced day by day in each and every activity. Librarians also are moving with this fast development of computers using various kinds of databases, software and library automation software packages and automating their diverse activities in the libraries, as a solution for this matter (*Wright, 1996*).

It has been seen increasing activity and complexity in the information field. As a result acquisition cataloguing, circulation and serial management have become more specialized function demanding a high degree of efficiency. This growing complexity can be managed easily with the use of good library automation software packages (*Pradhan, 1995*).

4.2 Software

A set of command is known as programme, and a set of programme is known as software. The hardware operates on the basis of a set of programmes of software (*Sharma, 1993*). Basically, software is the program that runs the computer to produce the required results. It is said that, “A computer without software is similar to a man without his brain, or a library with neither books nor librarians”. Therefore, on

principle, the selection of software comes before hardware. The author emphasized the software needed for library housekeeping routines and information retrieval services in detail (*Malik, 1994*).

4.3 Types of Software

Although the range of software available today is vast and varied, most software can be divided into two major categories:

1. System Software
2. Application software

4.3.1 System Software: System software is a set of one or more programmes, designed to control the operation and extend the processing capability of a computer system. In general, a computer's system software performs one or more of the following functions.

- Supports the development of other application software
- Supports the execution of other application software
- Monitors the effective use of various hardware resources, such as CPU, memory, peripherals, etc.
- Communicates with and controls the operation of peripheral devices, such as printer, disk, tape, etc.

The programmes included in a system software package are called system programmes, and the programmers who prepare system software are referred to as system programmers (*Sinha, 2003*). Some of the most commonly known types of system software are:

- Operating System
- Programming Language Translators
- Communication software
- Utility Programmes

4.3.2 Application software: Application software is a set of one or more programmes, designed to solve a specific problem, or do a specific task. Some of them are available in the market-place as software packages. They are as follows:

- Word Processing Software
- Spreadsheet Software
- Database Software
- Graphic Software
- Personal Assistant Software
- Education Software
- Entertainment Software
- Desktop Publishing Packages
- Library Management Software
- Expert systems

Today, readymade software packages are available in the market for a wide range of applications and their capabilities differ, prices vary and their versions keep on changing. Selection of suitable software package is an important factor in library automation system. There are not many publications or case studies discussing the criteria for selecting suitable software. The selection is based on specific needs of the institution, its environment, budget, user's aims and objectives (Malwad, 1995).

One of the software distributors Soft-link Asia declared "Our Mission is to make information accessible to specialists, as well as general groups of society, through effective employment of information technology in libraries- the epicenter of knowledge storage and discrimination center". The software featured is a mixture of commercial software, shareware, and Open Source Software. These three basic kinds of software packages can be seen in the present day context.

4.4 Commercial Software

Hundreds of commercial library software have been developed and run successfully today in the world and there are many software directories and other tools available that help librarians to select suitable software for their libraries (**Malik, 1994**).

Commercial software typically provides solutions to particular application problems. Since they are developed on a commercial scale in a competitive market for use by a variety of customers, a great amount of skill and effort is put in their development. Therefore they are reliable, easy to use and in many instances, well-documented (**Malwad, 1995**).

In the context of developing countries, LIBSYS, Alice, SLIM, EASYLIB, SOUL are few examples of the most popular commercial library automation software. Some software is expensive and some have reasonable price. It is beyond expectation to use commercial software for some libraries, due to the lack of budget to buy and sustain the software package as the recurring cost involved by way of maintenance and newer versions. But the library which is financially strong can purchase and use commercial software to automate their library. The British council Nepal, TITI and SAARC Tuberculosis Center has used Alice for Windows software.

4.5 Open Source Software

Open-source software is an antonym for closed source and refers to any computer software that is released free of cost and its licenses usually prohibit modifications and commercial redistribution. Source code is available under a license that permits users to study, change, and improve the software and to redistribute it in modified or unmodified form. A definition of open source is “free distribution and redistribution of software and source code; licenses that allow distribution of modifications and derived works and non-discrimination against persons, groups or fields of endeavor” (OSI; www.opensource.org).

The term is most commonly applied to the source code of software that is made available to the general public with either relaxed or non-existent intellectual property restrictions. This allows users to create user generated software content through either incremental individual effort or collaboration. Open source software gained popularity with the rise of the internet and its enabling of diverse production models, communication paths and interactive communities. There are very few cases of software that is free software but is not open source software, and vice versa. The difference in the terms is where they place the emphasis.

4.6 Shareware (freeware) Software Packages

Shareware is software that is released free of cost in binary format but only for a limited trial period after which users are encouraged to purchase the software. It is public domain software which is usually obtained through shareware libraries. It is also called freeware software packages and its licenses usually prohibit modifications and commercial redistribution. Free software is defined in terms of giving the user freedom. This reflects the goal of the free software movement. Shareware is essentially available free of charge although users are likely to be asked to pay a nominal charge to the library to cover the costs of copying the software and the disks on which it is provided. In addition, the original writers of the software usually charge registered users for manuals. This type of software can be used by anybody for non-commercial purposes. CDS/ISIS developed by UNESCO, is one such freeware, specially designed for handling textual information which is very popular in developing countries.

4.7 Freeware Software used in Nepal

Introduction of CDS/ISIS software had an enormous impact on library automation in Nepal. In 1986, UNESCO distributed CDS/ISIS software free of charge in academic libraries. ISIS software permitted the creation of individual data entry formats suitable for the needs of the libraries. The university and college libraries decided to use a common data entry format, which enable convenient exchange of data. Another strong reason is that the training is provided by many library training institutions and even prescribed by Central Department of Library and Information Science, Tribhuvan University (TU) in its MLSc syllabus.

However, in the last two decades, several attempts were made in Nepal at the institutional level for computerization of library and information services as well as number of libraries have started commercial software packages to automate their libraries. Now, a few organizations and library associations are also making efforts in this direction. As mentioned in the first chapter, there are six universities and one deemed university in Nepal. The total number of affiliated, constituent and private colleges all over the country under these universities is about 548. Out of the 548 colleges, 250 colleges are situated in Katmandu (**UGC 2005-2006**). Among them only 30 libraries have been studied where the computer is used for automation in their libraries. Other libraries are not included because they have not used any library software for automation in their library.

Table A: Automation status of public and private college and university libraries situated in Kathmandu

S.No	Name of the Institution	University	Status	Public	Private	Software Used
1	Tribhuvan University Central Library	TU	Constituent	Public		CDS/ISIS, Lib Info
2	Kathmandu University Central Library	KU	Constituent	Public		SOUL
3	Public Youth Campus	TU	Constituent	Public		MIDAS LMS
4	Nepal Medical College	KU	Affiliated		Private	Lib Info
5	Kathmandu Medical College	KU	Affiliated		Private	Library Manager
6	Institute of Engineering, Pulchok, KTM	TU	Constituent	Public		LMS
7	Nepal Engineering College, changunarayan	Pokhara	Affiliated		Private	WINISIS
8	Apex College, KTM	Pokhara	Affiliated		Private	LMS
9	Kathmandu College of Management, KTM	KU	Affiliated		Private	CDS/ISIS
10	Nepal Commerce Campus, Minbhawan	TU	Constituent	Public		CDS/ISIS
11	Khopa Engineering College, BKT	PU	Constituent			CDS/ISIS
12	Kathmandu Engineering College, Kalimati	TU	Constituent		Private	WINISIS
13	Global college of Management, Baneshwor	TU	Affiliated		Private	MIDAS LMS
14	National College, Sanepa	TU	Affiliated		Private	CDS/ISIS
15	Prime college, Balaju	TU	Affiliated		Private	In house s/w
16	Institute of Medicine, Nursing Campus	TU	Constituent	Public		CDS/ISIS WINISIS
17	Everest Engineering College, Gongabu,	Pokhara	Affiliated		Private	WINISIS
18	Amrit Science campus	TU	Constituent	Public		CDS/ISIS
19	Padmakanya campus	TU	Constituent	Public		WINISIS
20	Shankardev campus	TU	Constituent	Public		CDS/ISIS
21	Nepal Law Campus	TU	Constituent	Public		CDS/ISIS
22	Campaign college	TU	Affiliated		Private	In house s/w
23	Nepal College, Baneshwor	KU	Affiliated		Private	In house s/w
24	Training Institute of Technical Instructor (TITI)	KU	Affiliated	Public		ALICE for Windows
25	San International College	PU	Affiliated		Private	WINISIS
26	Kantipur City College, Putalisadak	PU	Affiliated		Private	WINISIS
27	St. Xavier's College	TU	Affiliated		Private	In house s/w
28	National Institute of Science and Technology (NIST)	TU	Constituent		Private	WINISIS
29	Kathmandu College of Science and Technology (KIST)	TU	Affiliated		Private	In house s/w
30	People's Dental College	TU	Affiliated		Private	WINISIS

The above table shows that the majority of the academic institution libraries 17 (56%) out of 30 are using free software CDS/ISIS and WINISIS. Only 9 (30%) libraries have used other commercial software and 5 (16%) have used in-house software which have been made by students as their project work for the automation of their library. It is also found that only 7 public academic institutions out of 12 have used CDS/ISIS and 14 private academic institutions out of 18 have used CDS/ISIS and in-house software. It is clear that the librarians of public institutions are more conscious and aware to have the standard library automation software rather than the librarian of private institutions. However, either public or private, most of the academic institutions are still using CDS/ISIS free software.

It is also found from the table that many private college libraries are using simple software only for the record keeping matter which is created by the students as a project work. These types of database have either house keeping operations or other facilities.

4.8 Commercial and Open Source Software

Open Source Software(OSS)	Commercial Software (CS)
Open source software is available almost free of costs.	Commercial software has initial purchase fees, licensing fees as well as upgrade fees.
OSS can study, change, and improve the software, and redistribute it in modified or unmodified form	CS cannot be change, modify, improve and redistribute by users
OSS can be recompiled, or at least ported to new hardware and operating system	CS is usually distributed only as a binary that will run only on a single hardware platform and single version.
OSS makes the preservation of digital objects easier and less risky.	CS is very difficult to preserve over the long run without developing hardware emulation.
OSS is easily audited.	It can not be easily audited.
It might be difficult to use and may not be well documented	It is reliable, easy to use and in many instances, well-documented.
OSS is often not as user-friendly	CS is user-friendly
OSS is often criticized for lack of support and maintenance	CS provide support and maintenance
Support and maintenance costs of OSS are often lower.	Support and maintenance costs of CS are higher

4.9 Library Automation: An overview

The literature on library automation has gone multifarious, whilst in the past it was mainly concentrated on traditional housekeeping functions of acquisition, cataloguing and circulation. Today it has expanded on the library management systems to incorporate OPAC, CD-ROMs, networks, desktop publishing, office automation, etc. There is hypermedia, multimedia, virtual reality, etc. It is beyond the scope of this study to cover all the developments that have taken place; instead the review will focus only on core areas and significant trends in library automation.

Library automation refers to use of computers, associated peripheral media such as magnetic tapes, disks, optical media etc. and utilization of computer based products and services in the performance of all type of library functions and operations. Computers are capable of introducing a great degree of automation in operations, functions since they are electronic, programmable and are capable to control over the processes being performed. The utilization of computer and related techniques make the provision to provide the right information to right reader at the right time in a right form in a right personal way (**Bhardwaj, 2000**).

Definition

Many author used the term 'library automation' to mean the use of computers as an aid for library activities. Markuson says that "Library automation in its broadest sense can be taken to mean the employment of machines for library processes. In general, it means the application of computers and related data processing equipment in libraries".

According to Salmon, "library automation is the use of automatic and semiautomatic data processing machines to perform such traditional library activities as acquisition, cataloguing and circulation. Although these activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries. Library automation may thus be distinguished from related fields such as

information retrieval, automatic indexing and abstracting and automatic textual analysis”.

4.10 History of Automation

The automation of libraries started in the early 1960s with the development of computer use. The period from 1965 to 1975 (**Boss, 1990**) encompasses virtually all principle development in the application of computer to information retrieval. Among the earliest true computer based systems were those established at the Naval Ordnances Laboratory, Silver Spring, Maryland in 1959 and the system put in to operation by Western Reserve University for the American Society for Metals in 1960. Armed services Technical Information Agency in the period 1959-1963, National Aeronautics and Space Administration in 1962 and the National Library of Medicine launched Medical Literature Analysis and Retrieval System Services (MEDLARS). These agencies must be regarded as the pioneer of large scale producers of bibliographic information by computers. These agencies have been important and influential in the development of information retrieval in the USA. In India, computerization and networking activities started with the establishment of National Information System for Science and Technology (NISSAT) in 1979. In Nepal, the library system entered automation scenario after 1986, when UNESCO distributed free CDS/ISIS software.

4.11 Reasons for Automation

The first and foremost reason for automating the libraries is bibliographic control. Second it is for efficiency and expediency. Similarly automation is for the sake of accuracy; it results in the reduced workload, ease of use, and increased self esteem of the library. The capabilities of computer associated peripheral media and its application in library activities and services led to a highly significant quantitative and qualitative improvement especially in online technology. Some of the more general benefits of library automation are:

1. Accuracy
2. Speed
3. Improved use of resources
4. Improved customer services
5. Financial control
6. Stock control
7. Information services
8. Improved image of the library
9. Modern technologies can be adapted
10. Accurate production and evaluation of management information e.g. useful statistical information, how stock is used, and monitoring membership.

According to **Suku, (2000)**, the factors necessitating automation of University libraries are the following:

1. Explosion of knowledge resulting in numerous specializations and flow of almost non stop information;
2. Inability of users to explore unlimited literature;
3. Wastage of enormous precious time in handling routine and repetitive library operations;
4. Even the largest of the libraries cannot acquire and make available the entire published materials; and
5. To facilitate easy, fast, and reliable sharing of resources between libraries, cutting across space and time.

4.12 Criteria for Automation

Neither size nor history nor any other single aspect of library is likely to claim for computerization. Number of titles can't be the norm (Airy, 1999). So is the number of clientele. In short there is not any hard and fast criterion for it. The introduction of microcomputers has rendered it possible even for smaller libraries to operate

comfortably for the new transformation. However, there are some factors worth considering: Financially strength, hardware requirements, trained and skillful manpower.

4.13 Factors for Library Automation

4.13.1. Growing Information and Shrinking Space

The enormous growth or information explosion of literature in each area, subject in number and size and results fragmentation of literature and increasing specialization field of knowledge. Due to this information explosion, the quantity, variety and complexity of information are being increased rapidly in every field. Computer application can solve this problem, as it is capable of storing bulk of information on tiny storage mediums i.e. a CD-ROM (Bhardwaj, 2000) of Encyclopedia Britannica. Serials, abstracts, indexing periodicals etc. are already available on CD-ROM.

4.13.2. Incensement of Users and the Flood of Information

Increasing the number of clientele of Library and Information Centers (LICs) and their specialized desires forces us to change the method of organizing information because traditional methods is going to become inadequate. The manual method has serious limitations and facing problem to provide access to reader's information that is available in a wide range of publications.

4.13.3. Escalation of Price

The rapid enhancement price of information materials motivated the LICs to share their resources. They realize that the only way they could fulfill their client groups is by effective cooperation between libraries, information centers and networks and by sharing of all type of resources.

4.13.4. Enhancement in Budget

As increasing the members of the library, cost of information materials, services and growth of information or information explosion, the budget of the libraries is also raised. It allows automating the library activities and making maximum utilization of the library fund.

4.14 Information Technology in Nepal

The practice of sending, receiving and intercepting information using different modes existed in Nepal since the ancient times. Nepalese started to communicate by sending messages through e-mail and retrieved essential information from the Internet. Thus, the period in the early 90s could be called the beginning of computer era in Nepali history. The first instance of use of large scale computer in Nepal was in the year 1971(CAN, 2005) when tabulation of census data was made.

In earlier eighties, National Computer Center (NCC) was established and the centre was entrusted with the task of processing governmental and institutional data. But due to lack of work, the centre had to limit its work such as tabulating and publishing the results of SLC (School Leaving Certificate) examinations. The only large scale work that was performed by the centre was data entry, editing, coding and processing of 1991 (CAN, 2005) census. The data entry was done by using 40 XT compatible micro computer terminals under the local area network environment.

At present almost all offices, business houses, banks, and middle class and high class families use computers for their day to day activities. Thus computer has become an integral part of Nepalese life.

4.15 Library Automation in Nepal

In Nepal, the concept of library automation has been started since last two decade. Some libraries have automated one or more modules. Commonly automated modules are catalogue, acquisition, circulation and serial management.

The British Council Library, Katmandu University Central Library (KUCL), American library are the few examples of automated library in Nepal. Tribhuvan University Central Library (TUCL) and other libraries are partly automated and going to be fully automated library in near future. The major constrains of library automation were absence of planning, non-availability of vendor developed software at affordable prices, restrictions on the import of hardware, lack of trained manpower, non- existence of standards, and absence of co-operation. However, the situation has been improved in comparison of the past due to the availability of PCs for a low cost and the availability of CDS/ISIS (free software) and other software as well as professional manpower. Institute of Medicine, Nursing Campus, Maharajgunj started its automation by computerizing its catalogue in 1993 with CDS/ISIS. TUCL started CDS/ISIS in 1995 and has installed WINISIS in 2000. KUCL and its other three schools (KUSMS, KUSOM, KUSOEdu), Pokhara University and many private colleges have also started using CDS/ISIS. After 1995, the institution which can afford computer in a library gradually shifted their card catalogue into machine readable catalogue.

When multi-sited library felt difficult without maintaining all the function and services of the library, they started to offer integrated library systems. In 2004, the library of Kathmandu University installed integrated library management software developed by INFLIBNET, UGC, India. TUCL and Nepal Medical College has also implemented the Lib Info, (version-1) in 2006 considering automating all the library function and services. Similarly, Training Institute of Technical Instructor (TITI) has implemented ALICE for Windows (AFW). Besides academic libraries, British Council Library, and SAARC Center of Tuberculosis has also implemented the

commercial library automation software AFW which is a PC based, DOS/Windows platform, integrated library software for developing their automated systems. American library is also automated library with ‘Sage brush Info center’ software.

Similarly, Appex College (PU) and Institute of Engineering (TU), Pulchok has used Library Management System(LMS) web based integrated software with an efficient service including the circulation module and online Public Access Catalogue (OPAC). Public Youth campus (TU) has developed its library catalogue using MIDAS LMS. Although the study is focused only on academic libraries, it has tried to present the status of other public and special libraries also and their used software packages for the general information as given on the followings table:

Table B: Library Automation Software Packages Used in Nepal

S.No	Academic Library	Name of the automation Software used	S.No	Non-Academic Library	Name of the automation Software used
1.	TUCL	CSD/ISIS,WINISIS, Lib Info	1.	British Council Library	ALICE for Windows
2.	KUCL	SOUL	2.	American Library	Sage brush Infocenter
3.	Public Youth Campus	MIDAS LMS	3.	SAARC TB Center	ALICE for Windows
4.	Nepal Medical College	Lib Info	4.	Library of Ministry of GeneralAdministration	LIS
5.	Kathmandu Medical College	Library Manager	5.	ICIMOD	CDS/ISIS
6.	Institute of Engineering, Pulchok, KTM	LMS	6.	Patan Hospital	CDS/ISIS
7.	St. Xavier’s College	College Library system	7.	UNESCO Library	WINISIS
8.	TITI	ALICE for Windows	8.	WECS	WINISIS
9.	GlobalCollege of Management	MIDAS LMS	9.	Nepal Bharat Library	CDS/ISIS
10.	KIS	ALICE for Windows	10.	Nepal Natonal Library	CDS/ISIS
11.	Institute of Medicine, Nursing Campus	CDS/ISIS WINISIS	11.	Kathmandu Public Library	CDS/ISIS
12.	Khopa Engineering College, BKT	CDS/ISIS WINISIS	12.	Dilliraman Regmi Kalyani Pragma Pratisthan Library	WINISIS

Some academic libraries have not started their automation yet. Few of the academic libraries in this group have one PC and they are being used for bibliographic tasks.

4.16 Academic Library

Library is a social institution, which provides the relevant information to the readers. Its aim is to enable the users to make the most effective use of the resources and services to the users. The information system of Nepal incorporate various library systems like academic library, public library, national library, government library, special library, etc. Among these, academic libraries of Nepal are described with the characteristics and history, the growth, profile and services provided of by them. The focus will be given to the university college library in this study.

4.17 General Aspects of University Libraries

The University library occupies a unique position among the academic libraries. It forms the key stone in the arch of higher education. It is described as “The heart of the University” the “Workshop of Scholars” and “The library of learned” (*Sharma, 1990*). The prime function is to contribute towards undergraduate and graduate study programme as well as the research programme of the university. It is supposed to perform the different functions like teaching, research publication; conservation of knowledge and ideas extension and services and interpretation. A very few university and institutions of higher education library in Nepal have automated their collections and many college libraries are in the process of computerization of their collections and services. The university library should aim to advance the functions of its university as follows:

1. To fulfill the teaching and research needs of the University.
2. Instruction in the use of the library
3. Precision of general and specific information
4. Literature search
5. To promote resource sharing, networking and exchange of databases.
6. To provide documentation and information services and bring out relevant publications.

7. To help develop libraries and promote standards, guidelines and best practices.
8. To promote professional expertise in information management and conduct trainings
9. Holdings of library exhibitions, other exhibitions etc.
10. Interlibrary loan

4.18 Challenges of Automation

University and college libraries in Nepal are realizing the need to move from their isolated past into integrated systems and networked operations. Academic libraries in Nepal are trying their best to catch up with their counterparts in the developed world. Library automation in Nepal started in the late 1990s at various stages. Automating the library services will greatly benefit not only the library patrons but also the library staff members who are responsible for providing different information services in particular and library in general. But it is unfortunate that not much has been done in developing the facilities of computerization in academic libraries in Nepal due to various reasons. Lack of adequate fund is a common phenomenon of University and college libraries in Nepal. Due to the budget cuts, they are not in position to maintain consistency in their collection development activities

The problem of managing libraries efficiently and effectively has been multiplying at a frantic rate. Added to this, insufficient staff, increasing work load and shrinking budget for libraries have put in a fix. It is a matter of experience that with the available staff and resources, manual and/or traditional operations and services are found to be insufficient and ineffective vis-à-vis such alarming problems.

Large library collections alone do not solve the problems of information need of the Nepalese academic society since there is a permanent lack of the most recent high quality information. New information technologies help to decrease the lack of information, but the implementation of these technological applications is very problematic in the Nepalese academic libraries.

The old traditions of library collection handling, the insufficient knowledge of the library staff on the usage of modern information technologies, and the poor financial situation of parent institutions are just some of the problems which create great obstacles in the implementation of new information technologies in the Nepalese academic libraries. The following challenges are faced by the libraries:

4.18. 1. Technological Challenge

Library automation succeeds through the work performed by hardware, software, and people. The technological challenge is a big problem in library automation in Nepal. The digital divide in the academic libraries of Nepal vary from the availability of infrastructure facilities for use of ICT, to skilled staff to handle the new technological challenges being faced by these libraries. The emerging technology, changing conditions and user needs are continually redrawing the lines of innovations thereby providing the new challenges and opportunities. Upgrading of hardware and software in this situation becomes virtually impossible, because libraries today are faced with planning for automation within a rapidly changing and uncertain technological environment. For academic libraries the past was very difficult, the present is uncomfortable, and the future is uncertain.

4.18.2. Lack of Fund

Poor funding is a major challenge to libraries in Nepal. Lack of funds and lack of information resources have been problems for academic libraries for many years. Most of the universities and public colleges in Nepal are non- profit organizations. They are deriving their funds from the government and they have not initiated viable income-generating strategies to supplement government funding. Automating the Library will require both a substantial initial cost and on-going maintenance costs. When automation was first introduced in libraries, the main purpose was to decrease staff costs and to increase the efficiency of internal operations. This major financial

investment should not be made in the hope of reducing library operating costs, but rather to improve access to the in the widely varied collections.

4.18. 3. Lack of Expertise

Some remarkable results have been accomplished with very primitive software, all because of the skills of knowledgeable, confident, and practical professionals. Confidence comes from having the right mix of skill, know-how, and expertise. A confident professional is open and sharing and seeks cooperation and coordination. The latter are largely personal skills that depend on personality traits. Unavailability of experts is a big problem in Nepalese libraries especially in academic institutions. In the field of LIS there is a need for multidisciplinary expertise to combine Information Technology with LIS. The lack of advice and support could cause inappropriate hardware and software to be selected and the impact will be on the library and its users.

4.18. 4. Lack of Training

Most of the staff in academic libraries are trained in traditional librarianship. They are finding it difficult to cope with the requirements of the electronic age. Most of the academic institutions do not give preference to the in-house as well as out side training for the library staff. The most important people in making library computerization successful are librarians. They know their job well and should be most qualified to decide which function should or should not be computerized. It must be realized that librarians will not be able to make any use of computer equipment until they are provided with the know-how required to use it. So, before providing the equipment, it is necessary to make training arrangements for the professional development of librarians.

Tribhuvan University, DLIS produce the trained manpower in certain level but it is not sufficient to fulfill the need of the country. Besides this there are very few institutions providing the training in library automation. TUCL, Nepal Library

Association, Tribhuvan University Library Science Students alumni Association (TULSSA) some times provide basic training course of library science for 35 days including one week on WINISIS. Health Net Nepal sometimes offers training in automation launching some new software. But there is a need of short term training, long term training, on the job training and off the job training which helps the librarians to change their attitudes and restructure the traditional services to suit the developing techniques in other disciplines.

4.18. 5. Lack of Interest

It is observed in various libraries, that LIS professionals lack interest to make them as computerized libraries. They still think the library is a store house of books. They do not compromise to buy an expensive books, CD and journals but do not think that it should be well organized by automating all the library operations for better and speedy services.

4.18. 6. National Information Policy (NIP)

A National Information Policy (NIP) would ensure access a professional and specialized knowledge at the global level as the development of any country directly depend upon the planning and policies followed by the government of that country. Therefore, it is very important to develop a NIP to increase the flexibility and dynamism of Nepalese society to enable and to meet the challenges of the future. Therefore, to formulate basic directions, to establish and maintain a consistent framework to meet the developmental and cultural needs, information policy is a must. Still, there is no organization in Nepal holds the responsibility in the development of NIP and coordinate the activities. The policy shall be implemented in phase wise basis and minimum standards shall be designed for all level and type of LICS with machinery established for regular monitoring of the services.

4.18. 7. Computer Literacy/Education

Many of the staff of university libraries is not computer literate. This is a great setback in computerization. Many are conservative and traditional, and suffer computer phobia. Although the use of electronic information increases job satisfaction, confidence and the effectiveness of librarians in their work but lack of technical expertise can be very frustrating to the librarians. There is also a lack of technical support. Only few librarians are formally trained to initiate, develop, implement, and maintain computerized applications in the entire university library system.

4.18. 8. Electricity

Regular power supply remains a problem in Nepal. Frequent power outages constitute a serious bottleneck to automation. The cost of running generating plants is prohibitive.

4.18. 9. LAN/WAN

To a large extent, the existence of a University Wide Area Network (WAN) and a Local Area Network (LAN) within the library determines the success of computerization of library services. This is a major challenge to the universities in Nepal. There is no reliable WAN as well as LAN in most of the universities and campuses. Campus LAN is most important setup to provide wider access to library and information services.

4.18. 10. Maintenance

Government Universities and colleges in Nepal particularly have very poor maintenance. There is serious problem in the frequent computer and network breakdowns and/or failures. Due to the lack of budget there is no annual contract for maintenance of computer and network. To handle the growth of the library database and ensure fast data entry, retrieval, and inquiry through the OPAC, there is need for regular and consistent upgrade of computer facilities.

4.19 History of Library Automation Software

The library software packages did not develop at once. The study shows that it has developed generation wise which can be divided into four generation.

The first generation software was developed to run on specific hardware platform and proprietary operating systems. Low level programming language was used and the non standard database management systems were common feature of these software. Circulation module and cataloguing module were the priority issues for these systems. Although these software packages were module-based systems, there was no or very little integration between modules. The single user stand alone structural design was used in this generation.

The second generation library software packages, with the introduction of UNIX and DOS based systems, become moveable between various platforms. Limited number of users and shared structural designed can be seen. The special features of these packages are the ability to shift between systems for specific function. Command driven or menu driven features can be seen in this generation. The capacity of record holding has been improved.

The third generation library management software packages provide fully integrated systems. They are based upon relational database structure. Fourth generation programming language was used in this generation. These software packages introduced a range of standards, which were a significant step towards Open System Interconnection (OSI). Colour and Graphical User Interface (GUI) features, such as windows, icons, menus and direct manipulation have become standard and norms in this phase. User support was extensively increased.

Based on the improvement of the technology, the features of fourth generation library management software are based on client server architecture and facilitate access to other servers over the internet. Object oriented database management system and

windows operating system have been introduced in this generation. These systems allow increasing multiple sources from one multimedia interface. Customized report generation was also available in this phase. Moreover the latest library automation software allows customized report generation and to manipulate data and investigate various scenarios and therefore they have all the potentials to be a decision support tool. A comparative table of features and functionalities of softwares in four different generations is shown below in Table A.

Table C: Comparative Table of Features and Functionalities of Software

Features	1 st Generation	2 nd Generation	3 rd Generation	4 th Generation
Programming Language	Low level language	COBOL, PASCAL, C	4 Generation language	OOPS
Operating System	In house	Vendor Specific	UNIX,MS DOS	UNIX, Windows
DBMS	Non- Standard	Hierarchical and Network model	Entity Relation Model	Object Oriented Model
Import/export	None	Limited	Standard	Fully integrated and seamless
Communication	Limited	Some interface	Standard	Fully connectivity across the internet
Portability	Machine dependent and hardware specific	Machine independent but platform dependent	Multi-vendor	Multi- vendor and platform independent
Reports	Fixed format and limited fields	Fixed format and unlimited fields	Customized Report generation	Customized Report generation with e-mail interface
Colour	None	None	Available	Fully available with multimedia
Capacity of Record holding	Limited	Improved	Unlimited	Unlimited
Module integration	None	Bridges	Seamless	Seamless
Architecture	Stand-alone	Shared	Distributed	Client-server
Interface	Command driven (CUI)	Menu-Driven (CUI)	Icon-Driven (GUI)	Icon Driven with web and multimedia(GUI)
User Support	Single User	Limited Number of Users	Unlimited Number of Users	unlimited Number of Users
Multi- Lingual support	None	Limited (through hardware support)	Standard	UNICODE base

Source: Mukhopadhyay, (2005). *Progress of Library management software: an Indian Scenario*, <http://drtc.isibang.ac.in>, retrieved on March 5, 2007. www.wikipedia.com

4.20 Features of Good Library Software Packages

The library should have the best software for fulfilling the entire activity and to satisfy the users. Besides storage and retrieval, there are other housekeeping functions also which should be there in the software. Computerization of operation requires procurement of hardware and software.

The first step towards this will be the automation of the individual libraries and information centers and for this each organization has to follow and maintain certain standards. Several options are available for acquiring upgrading a library management system. (*Rowley, 1993*)⁵³

1. Buy or license a commercial software package
2. Join or make use of the system of a cooperative
3. Develop own system

Different types of libraries required library software packages with different dimensions and capabilities. For example, The University library where big collections and heavy circulation work has to be perform, a fully integrated software package is required with good response time and strong searching facilities, whereas for research libraries or other special libraries where the collections are limited but the readers have very specific requirement, a software with good searching capability is needed, which will enhance the search and present the result what is exactly required (*Ahmad, 1993*).

Even though, the software directories with the names and commercial details are available, it doesn't help librarian for the critical selection. It is obvious that by looking into the brochure or by the demonstration of the software for picture, inside capabilities and drawbacks of the software cannot be identified. Some of the most important and basic things like, the ease of inputting records, editing, cursor navigation, response time and user friendliness can be experienced only by using the

software. The software should be tested by taking actual examples and by entering and manipulating several dozens of records in to the packages (*Ahmad, 1993*)

A software package used for library work and services should have at least the following qualities (**Sharma, 1993**)

1. Database Management System (DBMS) features
2. High level integration
3. Data entry facility
4. Data updating/editing
5. Search/inquiries
6. Report/Display/Print
7. Menu driven and user friendly
8. Compatibility
9. Reputation of the sponsoring
10. Scope for local variation

4.21 Functions of Library Automation Software Packages

A good library software package should be the integrated for the entire range of library activities. The main functions of software packages can be listed as follows:

4.21.1 Acquisitions

This module automates the book ordering process, keeps track of items on order and allows for tight control of budgets. Acquisitions is usually linked to the cataloguing module providing an easy means of checking for items before ordering to ensure against duplication , and enabling library users to see (and Often reserve) items on order. A brief catalogue record is created at the time of ordering which allows the item to be put into circulation as soon as it is received in the library.

4.21.2 Cataloguing

This is usually the core module of an automated library system, without which no other modules will function. It allows bibliographic records to be created, imported to the system and parameters relating to them to be set. The catalogue can usually be searched via a menu or a command driven system. Systems are usually flexible enough to give a choice in how the information is displayed in a record. Such records can also be edited and deleted and may include provision for entering abstracts and free text.

4.21.3 Circulation

The circulation module is used for issuing, returning books or other items of stock, renewals, reservations, overdue and the calculation of fines. It also enables the production of notices to library members. Lending periods and types of membership can be defined.

4.21.4 Serial Management

The serial module, sometimes incorporated in to the acquisitions module, allows new issues of journals or magazines to be booked in without having to manually enter the details for each one, It predicts when items are due to arrive and can generate automatic claims for items not received. Most systems also create internal circulation lists for journals.

4.21.5 Online Public Access Catalogue (OPAC)

The OPAC sometimes comes as part of the cataloguing module but with some systems it is a module in its own right. It enables library users to search the catalogue using a more user-friendly searching environment than the cataloguing module itself, with a menu driven or windows-style interface. The sorts of searching which can be carried out as defined by system or the library.

4.21.6 Report Generator

A report generation facility is often provided as a module on its own although many systems incorporate reporting function within their other modules, e.g. circulation reports will be generated from within the circulation modules. Stock reports from the cataloguing module, etc. A separate reports module often allows for greater flexibility in the type of reports that can be generated by the system, but it may also involve more work in setting up.

4.21.7 Interlibrary Loan

Generating requests to other libraries, notifying the users of the availability of items, keeping records of item requests, loan or returns, include in this module.

4.21.8 Community Information

This module provides and keeping tracks of the names and address of contacts such as local organizations and it allows a particular library to develop its own database of information its might like to offer its public.

4.21.9 Import/Export

This module allows the import and export of catalogue records to/from the system in UKMARC format and into and out of other systems, e.g. the GCS catalogue. As the GCS system holds records in UKMARC format, it is essential that, software should have this facility in it.

4.21.10 Reference Service

It is proving helpful in answering user questions and providing them the required information.

CHAPTER V

5. Academic Institutions Included in the study

It has been planned to study all the university libraries of Nepal and the library automation software which they have used. But through the survey and observation, the study compelled me to include some other college libraries also because very few university libraries are automated and it is not sufficient to fulfill the objective of the study.

5.1 Tribhuvan University (TU)

Tribhuvan University, founded in 1959 AD, is the first university situated in Kirtipur, five kilometers to the south-west of the capital. TU has 61 constituent campuses and 348 affiliated colleges. Presently there are five faculties, four institutes and four research centers along with a central office of TU. The constituent and affiliated colleges have their own library that have separate identification can be named as separate libraries. Currently, it has approximately 1, 53,126 (UGC 2005-2006) students and 6,000 teachers engaged in academic pursuits.

Tribhuvan University Central Library (TUCL) was established along with the University in 1959. The library began with a collection of 1200 volumes of books. Now, the collection exceeds 3, 00,000 volumes of books. In addition, there are more than 25000 (UGC 2005-2006) back volumes of periodicals. Over 450 titles of periodicals are received every year on subscription or as gifts. It is the largest library in the Kingdom in terms of collection, services and the number of members.

The library uses the Dewey Decimal Classification System for arranging the books on shelves. It has also maintained the traditional system of card catalogues for searching the materials. But in addition to this, since 1995, it has been providing computer database searching facilities through OPAC (Online Public Access Catalogue). About

50,000 library materials including books, dissertation, reports etc. are computerized using CDS/ISIS and WINISIS software packages. TUCL is going to be fully automated library using new Library Management software named Lib Info. The library has 79 full time staff. Out of this, there are 12 professionals, two administrative officers and other supporting staff.

Program for Enhancement of Research Information (PERI)

TUCL is the national coordinating institute for International Network for the Availability for Scientific Publication (INASP). PERI is one of the program under INASP. Through this, TUCL provides full text database of world's more than 25000 high-quality scientific journals and access to contents, abstracts from 20,000 scientific journals from different databases which are available in TUCL website <http://www.tucl.org.np>.

5.2 Kathmandu University (KU)

Kathmandu University is an autonomous, not-for-profit, non-government, public institution established in 1991. It is situated in Dulikhel, Kavre, offering various intermediate, undergraduate, graduate and postgraduate level programs in science, engineering, medicine, management, education, pharmacy, environment, music, human & natural resources, information technology and biotechnology. KU has 6 schools and 11 affiliated colleges. In addition to 2500 (UGC 2005-2006) students in its constituent schools, 2700 students are studying in its affiliated colleges (<http://ku.edu.np>).

Kathmandu University Central Library (KUCL) holds approximately 40,000 collection including books, video and audio cassettes, CD-ROMS, journals and magazines. One professional, one paraprofessional and five non professional full time staffs are employed in different sections and serving the researchers, faculty members, students and other administrative staffs. Access of PERI recourses is also available in the library.

KU Central Library previously used CDS/ISIS for information storage & retrieval. The University purchased Software for University Libraries (SOUL) developed by INFLIBNET Centre, UGC of India and installed in three different libraries of KU, i.e. Central library, KUSMS library and Management & Education library, which made KU library the first academic library to have library automation in Nepalese context. The web-based Online Public Access Catalogue (OPAC) is a remarkable feature of the software by which a user would be able to find out his/her requirements and his status himself online.

5.3 Mahendra Sanskrit University

Mahendra Sanskrit University is the second university of Nepal, which has been started from 1985. It lies in Dang District, Rapti Zone, and Mid Western Region. There are altogether 24 Constituent and affiliated colleges situated at different parts of the country. (UGC 2005-2006). 1250 students are studying presently. This university was initiated for providing higher education in Sanskrit which had developed the concept of library from its beginning. Besides this, the university offers Sanskrit language training and Karma Kanda Training.

The library of the university has good collection of books, periodicals as well as other research materials. From the initiation its all constituent and affiliated colleges also are providing the library services for the students and faculty members from the Para professional librarians, although they are in early stage of development in the area of Information Technology.

5.4 Purbanchal University

Purbanchal University is community based university, has been started from 1995 as the fourth university of Nepal. It is situated at Biratnagar the eastern part of Nepal. It has two constituent campuses and 71 affiliated campuses in the country. There are 8812 (UGC) students are studying with 376 teachers. All the campuses have initiated the libraries but they are still in early stage of their development. Hence, their collection, services, management and professional involvement are very poor.

5.5 Pokhara University

Pokhara University is a community-based university, started from 1997 in the western part of Nepal. It has 29 constituent and affiliated campuses in the present structure (UGC). It has 5207 students. Its main function is to produce skilled human resources necessary for the national development by providing quality education. In order to achieve such objectives, Semester system based curriculum and evaluation were carried out with high priority to practical knowledge and researches. The University developed its three constituent academic institutions where Bachelor's and Master's Degrees programs are running. There are three divisions such as sciences and technology; management studies and humanities & social sciences.

The library of Pokhara University has 6580 volumes of books, 320 reports of different subjects and theses of Masters and PHD scholars. It has subscribed 10 different journals of particular subject of Pharmacy and management and 30 different magazines and newspapers. The latest version of WINISIS has been used for the searching of bibliographic database of the library collection. The library has about 500 users i.e. students, faculty members and others.

5.6 Siddhartha University

Siddhartha University is the first Buddhist University of Nepal. It is supported by Buddhist Bhikkhus and common Nepalese people undertaking the responsibility for the success of this Buddhist University as well as by the people of Nepal, becomes a matter of pride and prestige of this country. It is situated in Nala, Kavre, about 25 Kilometres far from Kathmandu. The university has not started any academic program till date.

5.7 B.P. Koirala Institute of Health Science (BPKISH)

B.P. Koirala institute of Health Sciences is the outcome of the Bilateral Agreement between His Majesty's Government of Nepal and Government of India for setting up a

Medical College cum Hospital in Nepal. The agreement was signed in March 1994. The institute is located in the former British Army Goppa Camp, South of Dharan Town, Sunsari District, Kosi Zone Eastern Nepal. It is being a second medical college in Nepal after the Institute of medicine of TU, had planned to admit 40 students each year in the course.

The BPKIHS Central Library has been growing in every aspect like collections, services, staff and other facilities. The users of the library include faculty members, senior residents and doctors, post graduate & undergraduate students, paramedical professionals, nursing officers, staff nurses, technicians and other supporting staff members of the Institute. The library collection includes reference books, lending books (textbooks), non-medical books, departmental libraries, WHO Publication, theses & research reports, international & Nepalese publications.

It has implemented CDS/ISIS for bibliographic database and new software developed by Quick Solution Team as per library's requirement to facilitate circulation.

5.8 Other Academic Institutions (Colleges)

5.8.1 Institute of Engineering (IOE)

Institute of Engineering is one of the many colleges under Tribhuvan University (TU) and one of the four technical institutes of TU. IOE is a pioneer college in the field of engineering education in Nepal established in 1942 as a Nepal Engineering School. It offers a Bachelor's level course in Civil, Architecture, Electrical, Electronics, Mechanical, Computer, and Agriculture engineering. It also offers Master's Degree level course in urban planning, information & communication engineering, structural engineering, environmental engineering, water resources engineering, geo-technical engineering, and renewable energy engineering. IOU also offers the Ph.D. level courses in civil, electrical, mechanical engineering and in Urban Planning.

Institute of Engineering (IOE) library was established in 1971 AD. It has about 72000 volumes books, few journals and 2000 volume dissertation and Thesis. About 1650 students and 650 faculty members and other administrative staffs use the library. All library stock is divided in three different sections. These are General or Lending Section, Reference Section and Main Reference Section. The books are arranged according to DDC and uses AACR-II. It has used Library Management System (LMS) software for the automation of the library. IOE has its own V-Sat link and server for its members with 24 hours internet service to its academic members. Any member of the library can browse the library catalogue through the campus web www.lms/ioe.edu.np.

5.8.2 Apex College

Apex College was established in 2000, situated in old Baneshwore, Kathmandu and affiliated to Pokhara University which is a modern and dynamic educational institution. Quality teaching, students centered learning, outstanding facilities, ample extracurricular activities, placement and academic services are the hallmarks of Apex's educational philosophy. Apex offers 2 years Masters of business Administration (MBA), 4 years Bachelor of Business Administration (BBA), BBA-BI (Banking Insurance), BCIS, BE com and BE Electronics and communication.

The library of Apex College has adequate collection of books, periodicals, reports and dissertations. The Easy access of relevant information is crucial for quality education. It has used LMS (Library Management System) software for the automation of the library. The library has 7000 volumes of books, 31 title periodicals and more than 100 dissertations.

5.8.3 Training Institute of Technical Instructor (TITI)

TITI was established in 1991 located in Kathmandu, Nepal. It is mandated for its programs and services by an act of the Council for Technical Education and

Vocational Training (CTEVT). TITI is supported by the Swiss Government through Swisscontact, the Swiss Foundation for Technical Cooperation. It provides training for trainers, technical instructors and managers, and occupational curriculum development specialists through regular programs and modules or through customized trainings. The high quality and unique instructional materials used in modules have been adopted by numerous countries in Asia and world-wide. The program of Bachelor of Technical Education is affiliated by Kathmandu University in 2001. This course is to prepare individuals for careers in the private and public sector at the level of instructor, teacher or trainer in technical subject area. The total program has been divided in to six semesters. Total credit hours of the program are 132.

TITI library was established in 1991 along with the institution. It has about 6000 volumes of books, 200 reports, many other documents, audio cassettes, video cassettes and CDs. This library mainly serves to the CTEVT PhD students, trainers and trainees being a training institute, B.Tech students and other staff of TITI. Although it is small library in size, it has used Standard Library Management Software Alice for Windows to automate the library.

5.8.4 Public Youth

Public Youth Campus was established in BS.2030, situated in Dhobichaur, Chhetrapati, Kathmandu. It is constituent campus of Tribhuvan University which offers the Intermediate to Master Level course in Management. It has about 5000 students. The library of Public Youth campus holds approximately 31,000 collection including books, Journals magazines and thesis. One professional, one paraprofessional and other non-professional full time staffs are working in different sections such as technical or processing section, circulation section and administrative section serving the researchers, faculty members, students and other administrative staffs. It has installed MIDAS LMS software packages for automation of the library.

CHAPTER VI

6. Features of Library Management Software Packages

The emergence of automated libraries in Nepal started in the year of 1990s when UNESCO'S most significant contribution through the introduction of Computerized Database System/ Integrated Set of Information System (CDS/ISIS) for the development of libraries in developing countries. DOS version and Window version of CDS/ISIS were widely used in Nepalese libraries combination with the microcomputer based bibliographic information systems (MIBIS), data structure for their library catalogues and serial control activities until the advent of commercial databases.

But the development of library with the Progression of Technology shows that the librarian were not satisfied only with the CDS/ISIS and WIN/ISIS which is not the fully integrated library software for the automation. Therefore, they decided to change over Windows based integrated commercial library Management software packages. Some commercial software being used in Nepalese libraries are of Indian origin, like SOUL, Alice Libsys etc. and some software has been developed by Nepalese professionals.

Apex College has developed a Library Management software package called LMS (Library Management System). Initially it was not considered as commercial software but knowing its suitable features after implementation, some academic libraries have started using this software to automate their library. Similarly, Information Access Network (IAN), a Private Company has introduced Libinfo version 1.0 for library and resource center automation that supports both English and Devnagari font. Besides this MIDAS LMS has developed by MIDAS Technology Pvt. Ltd., Nepal and LIS is developed by Universal Trading, Kathmandu.

The chapter describes the salient features and functions of the different library softwares.

6.1. CDS/ISIS

The full form of CDS/ISIS is Computerized Documentation System/Integrated set of information System or simply ISIS. It has been designed and developed by UNESCO's Division of Software Development and Applications office of Information programme and service. The windows version is called WINISIS.

It is a menu-driven generalized information storage and retrieval system, designed specifically for computerized management of structured non- numerical data bases. (UNESCO, 1989). The first version of CDS/ISIS was released in 1985, similarly, its 2nd version 2.3 in 1989, 3rd 3.07 version in 1992 and latest version 3.08 is available now. The range of ISIS users includes all types of libraries, as it is distributed free of charge. More than 5,000 libraries are licensed users worldwide. It is a non-numeric database specially designed for bibliographic records, and is multilingual. A database can hold 16 million records. It provides variable length fields, repeatable fields, and sub-fields. It has powerful indexing and searching techniques. It provides a stop word file. Advanced programming can be done using PASCAL language. Data can be exchanged according to international standard ISO 2709 (Sharma, 1993). It can run on LAN. Well elaborated documentation is available. Although CDS/ISIS cannot perform all housekeeping operations easily, its use is rapidly increasing. National distributors of this software in India are NISSAT, who are distributing this software free of cost to interested libraries; NISSAT is also financing and giving grants to various organizations for conducting training of library personnel in use of CDS/ISIS. DESIDOC developed a new package based on CDS/ISIS, under the name Sanjay.

In Nepal, the distributing agents are ICIMOD and RONAST. Many Nepalese Library Association offer courses on CDS/ISIS and hundreds of librarians have become trained users.

Features

1. The system allows its users to create non-numerical data-bases
2. Handling of variable length records, field and subfield
3. Handling of repeatable field
4. Data are created and modified in data entry worksheet
5. Data base can contain over 1,60,000,000 (16 millions) records
6. It allows a user to create data base on his/her own
7. Sorting and printing facility in desired format, (catalogue or index format)
8. Its indexing capabilities are extremely dependable and fast
9. Its search facilities are simple, accurate, and rapid
10. Integrated application program language of CDS/ISIS allows the user to introduce new software
11. Compatibility between the DOS and windows version
12. Powerful hypertext function to design complex user interface
13. Data can be imported and exported based on ISO-2709 format

6. 2. WINISIS

The window version of the CDS/ISIS is called WINISIS developed and released by the UNESCO in June 1997 has several additional useful features. The first window version was distributed for testing in May 1995 and the first WINISIS version officially released was version 1.31 launched in November 1998. WINISIS uses the same database structure as CDS/ISIS. Database created by DOS version of the CDS/ISIS system do not require any changes to be processed by the Windows version of this system. WINISIS, which is fully compatible with the MS-DOS version of CDS/ISIS, is designed for both current MS-DOS users who wish to shift to the windows environment, and for new users. It includes all the features of the MS-DOS

version except some database utilities such as the database re-initialization. WINISIS is in c++, facilitating the portability level

Features of the WINISIS

1. An integrated application programming language(CDS/ISIS Pascal and the CDS/ISIS Dynamic Link Library (ISIS_DLL)
2. Allow the user to build relational data bases
3. Powerful hypertext functions allow designing complex user interface.
4. Compatibility between the DOS and Windows versions
5. Maximum record size has been increased almost 4 times (30 KB in the Windows version as compared with 8 KB in the DOS versions)
6. Availability of graphical user interface (GUI)
7. Increased length of a format (up to 26,000 characters) and its output (up to 64,000 characters)
8. Availability of new numerical and string functions.
9. Guided search interface is available for inexperienced users of the package, apart from the standard search interface.

6.3. Software for Universities Library (SOUL)

SOUL is library automation software designed and developed by the INFLIBNET, UGC, India (Aryal, 2006). It is user friendly software developed to work under client-server environment.

It has the retrospective conversion facility from CDS/ISIS. During 2004, Kathmandu University has started SOUL and entered in to the phase of library automation. It has various modules like acquisition, circulation, cataloguing, serial control and Online Public Access Catalogue module (OPAC).

Features of SOUL

1. Windows based user-friendly software, well-designed screens, and logically arranged functions with extensive help messages.
2. Based on client server architecture allowing scalability to the users.
3. Uses RDBMS to organize and query the data
4. Does not need extensive training to use.
5. Specially designed to work in large academic libraries as it is capable of handling large records.
6. Multi-user and multi-lingual software
7. Supports internationally known standards such as CCF, MARC 21 and AACR-2 etc.
8. Provides export and import facility and adhere to ISO 2709 format
9. Versatile OPAC and very user-friendly with all in-built options
10. OPAC accessible over the web
11. Provides comprehensive list of reports, master databases and authority files
12. Provides facility to create, view and print records in devanagari or other regional languages of India
13. Functionally it covers every conceivable operation of a university library
14. Affordable cost
15. Fully tested at a number of university libraries and critically evaluated by a team of experts and practicing librarians.

6.4. Alice for Windows (AFW)

Alice was developed by Softlink International Australia in 1983. It is known as Alice for Windows all over the world. It is marketed through a number of agencies. In India, this software package is marketed by Softlink Asia Pvt.Ltd., New Delhi. This software is suitable for all types of libraries, such as primary and secondary schools in the public and private sectors, colleges, public libraries, booksellers, educational resource centers, charities, hospital, prisons, law practices, police forces, industrial companies, consultancies and palaces. **(Softlink, 1999)**

The software is included the demonstration package also. According to the Brochure, annual support/maintenance fee provides libraries with an unlimited number of support hours. This automation package is available in four distinct versions such as Public Library Version, Special Library Version, Academic Library Version and School Library Version.

The software has many modules which are categorized as follows:

Standard Modules

Management, Circulation, Inquiry (OPAC) modules

Advanced Modules

Acquisitions, Serial control, Journal Indexing, Multimedia, Web Inquiry module

Special Modules

Multilingual features, Self circulation, Union catalogue, Quick Pics. Modules

The software provides data protections, retrospective conversion facility and online tutorial and help system. It allows a library to purchase only the modules that suit its needs. Therefore, the package has in built capabilities to enable libraries to respond to the changing needs of their users. In addition to traditional library materials, this LMS package provide facilities to manage slides, audio and videocassettes, paper clippings, maps, charts, electronic documents and websites. Access to the system is controlled by a password system at numerous levels. Allocating read-only access to menu option is also possible in this package.

Authority files are available for all appropriate fields. Hence, it is possible to maintain consistency in recording of items. See and See also references may be added to the subject authority file. Location of documents in library could also be seen with the help of the library map. Alice for Windows supports a total of eleven search criteria to search the database through online or offline database. Alice has a capacity of holding

99 lacks records. It helps to generate reports in addition to 800 pre formatted reports available with standard set.

The software provides number of support services which include training programme, feedback system through user groups, free newsletters (Softlink, 2000) etc. It provides three types of training programs according to the requirement of the user, i.e. initial training, advanced training and office based training. Modules of AFW for an academic library:

- Acquisition
- Management
- Circulation
- Inquiry
- Periodicals
- Journal Indexing
- Web Inquiry
- Rapid retrospective
- Inter library Loans
- Patron self checking

The salient features of the Alice for Windows are given below:

1. Modular and menu driven package
2. Supports barcode technology
3. Operates on single user environment as well as on multi-user environment using Novell Netware/Windows 2000
4. Has rapid retrospective and special data protection function
5. Menu driven- use by both library staff and users
6. Has multiple searching facilities
7. Multimedia function – scanning of data videos, graphics, photographs, sound clips in records
8. Special data protection features – saving of data up to last record entered in case of power failure

9. Inbuilt tutorial modules and presence of help
10. Complete documentation – reference manual, tutorial manuals
11. Facilitates import and export data

6.5. LibInfo

Information Access Network (IAN) is a private company established by young information scientists, with a team of library science professionals, computer engineers, architects and management experts. First time in Nepal, IAN has introduced LibInfo version 1.0 (**LibInfo manual**) for library and resource center, which supports both English and Devnagari font. It can run at any environment ranging from a single computer and over a network (LAN/WAN). Tribhuvan University Central Library, Nepal Medical College, Library of Supreme Court and other few libraries have started using this software.

Features of LibInfo

1. Circulation includes book check in, checkout, member status and reservation of resources
2. Cataloguing includes detail of the cataloging procedures of library resources.
3. Inventory includes total books available in the library, books missing etc.
4. Report feature provides overall library statistics including total number of members, books circulated by every faculty, revenue generation of the library and most used title of books and other resources of the library.
5. Software is integrated with barcode system

6.6. MIDAS Library Management System (MIDAS LMS)

MIDAS Library Management System is developed by MIDAS Technology Private Ltd. Nepal. It can run on a single computer and also over a network. It can handle all the general housekeeping operations of the library such as acquisition, cataloguing,

circulation, serial controls, user search services. But it cannot support some other advanced services which will be available in modern library software.

Public Youth Campus, Nepal has used this software for the automation of library.

Features:

1. MIDAS LMS is also a modular software package
2. Facilitates a core library housekeeping operations.
3. Does not support barcode technology
4. Operates on single user environment as well as on multi-user environment
5. Lacking retrospective and special data protection function
6. Menu driven- use by both library staff and users
7. Simple search facility
8. Facilitates import and export data
9. Facilitates a report generation of library statistics
10. Inventory includes total books available in the library, books missing etc.

6.7. Library Management System (LMS)

LMS is integrated library automation software developed for handling large collection in the academic libraries. It is fully integrated, multi user system designed to run on super/Mini/Micro computers including PCs under Windows NT.

It is Web based software. It is in-house software designed and developed by Appex College, Baneswor, Kathmandu. Appex supports for installation of LMS software and its smooth operations at a site are provided by customer support group. LMS supports the entire library related activities. It has acquisition, cataloguing, circulation and serial control, OPAC, Web OPAC module.

The salient features of LMS

1. It supports web OPAC for access of bibliographic databases.

2. The software includes images and multimedia interfaces with LMS search engine.
3. Provides email reminders etc.
4. Powerful data editing facility
5. User defined security at subsystem and functional level
6. Database recovery procedure
7. Multi-lingual support for International language/scripts
8. provides import and export facility
9. Retrospective conversion facility
10. Searching facility
11. Browsable indexes,
12. Provides comprehensive list of reports, master databases and authority files
13. Affordable cost

Presently, this software has been implemented by Appex College and Nepal Engineering College, Pulchok, Kathmandu.

6.8 Library System (LIS)

The main application name of this system is Library System (LIS) with an EXE extension, which is to be selected as other applications. It is developed by Universal Trading Pvt.Ltd. (Universal Trading, 2007). Nepal. It is available in the program menu as well as in the desktop. This system has been developed using Visual Basic Dot Net under GUI with up back support of oracle Server. It runs under GUI environment and needs a window compatible printer for output of report, book sticker and tag.

This Library System includes:

- Detail information of the book
- Member registration
- Book issue and return
- Search option

- Reserve book
- Report generation
- Label and tag Printing
- Barcode Identification

Storing information securely, reliably and durably has become one of the most important application of computer systems since their introduction. The goal of automation is to replace manual-based library system with the full automation system. Some features of the software are as follows:

- Fully automated
- Full information of the books, reports, journals etc.
- Detail information of the members
- Fully automated transactions regarding issue, return and fine calculation of the lately returned book.
- Searching books and member details from any field is possible
- Complete report generation of the member details, book details, issued books, returned books, Maximum demanded book and entire fine calculation is possible Automatic book label printing
- Automatic book tag printing

Some other software in the field of library and Information science are discussed below.

6.9 KOHA

KOHA is the world's first open source integrated library system. The name comes from the Maori word for a gift or donation. The programme was written by Katipo communications for the Horowhenua Library Trust. Koha is currently maintained by a team of volunteer developers spread across New Zealand, France, Canada, and the United States (koha.org)

Koha being open source software, any library can make use of this software after developing according to their requirement. The biggest public library normally

Nelsonville Public Library, Ohio, and USA is using KOHA, with 250,000 items, and 600,000 circulations per annum. There is a source for mailing list for the development team. Online user group and help for its users are also available. It has been released under the general Public License (GPL). The characteristic of the license is that free to use, modify and distribute the program at no cost. It does not, however, support document distribution and indexing. It is basically designed to work on Linux operating system, but it can be installed on systems with windows 2000 and Windows NT also. This software is dependent on other freeware software like Apache Web Server, Mysql or any other SQL based Relational Database Management System, Perl Interpreter, Following Perl modules. Regarding the size of the database, a big server with lots of RAM will increase the capacity of data. The latest version 2.2 includes support for importing and exporting of MARC records and supports Z39.50 standard also. Installation support and manuals are available. Koha supports all major library housekeeping operations except serial control.

Different modules supported by Koha are listed below:

- Acquisition
- Circulation
- OPAC
- Membership
- Accounts and reports
- A library catalogue front end/ OPAC
- A library system intranet
- A circulation tracking system
- An acquisition/budgeting system
- A simple web based interface for patrons and library staff
- The search interface is easily customizable
- Simple acquisition system for smaller libraries
- Able to catalogue websites as normal items
- Web based OPAC and circulation system

- Auto- remind notice and fines
- Barcode support
- Full MARC support

Health Net Nepal is going to organize a training programme for KOHA open source software in near future then several Nepalese libraries may implement Koha integrated software due to the free of cost.

6.10 PhPMyLibrary

PhpMyLibrary is a Library automation application. The program consists of cataloging, circulation, and WebPAC modules. The programs also has an import export feature. The program strictly follows the USMARC standard for adding materials, which is the official Machine Readable Cataloguing (MARC). The application is popular in certain academic environments such as small university libraries.

PhPMyLibrary was developed by Polerio T. Babao III as his academic undergraduate thesis in Institute of Library and Information Science University of the Philippines, in 1998-2003. Though initial released was made 2001 as shown at Sourceforge.net, the final code has been done in 2003 and was released as open source library system following Koha, as the first open source Perl-based library system. Today, PhpMyLibrary has been used worldwide by small libraries that handles 10,000 to 100,000 catalog records. The PhpMyLibrary is now part of the three popular open source library system worldwide which include Koha, OpenBiblio, and PhpMyLibrary. This software is recently introduced and organized a training programme in Kathmandu by WHO.

Besides these, some softwares are presently not in use but very popular in Asian countries and may be used in future which are described below:

6.11. LibSys

LibSys is integrated library automation software developed for handling large collection in the academic libraries. It is most comprehensive and fully integrated, multi user system designed to run on super/Mini/Micro computers including PCs under UNIX, XENIX, and VMS environment. It is designed and developed by LibSys Corporation, New Delhi. It support for installation of software and its smooth operations at a site. It supports the entire library related activities. It has seven basic modules like acquisition, cataloguing, circulation and serial control, OPAC, Web OPAC, Article Indexing.

It was developed in COBOL language but now it has been converted in to c++ language. It has an index generation procedure and therefore, does not require any separate database software. It is based on three tier architecture providing and independent front-user interface, the transactions processor including a powerful bibliographic search database manager/engine with option to user Oracle, /SQL server as back-end RDBMS. LibSys, can be modified to operate with other software such as oracle, Unify, Ingres, etc. It also supports CD ROM, Networking (LAN, WAN) and multilingual use and is available in Client Server implementation with web enabled features. Thus can be accessed through a web browser and provides for networking of libraries.

CHAPTER VII

7. Selection Criteria

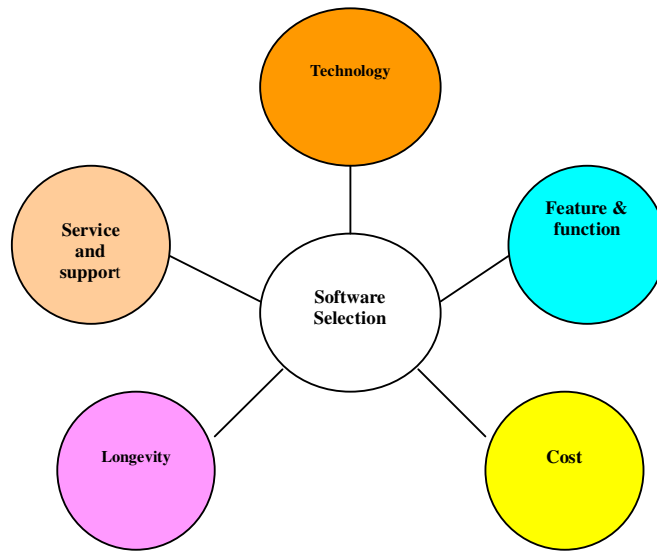
Software selection is not an easy task but selection should always be reflective of the mission. The quantity of commercially available software is vast and grows every day. Even fifteen years ago (Resnick), it was estimated that, in the field of educational software alone, there were more than ten thousand current titles. The success of automation depends on selection of right software and its correct implementation. A very few library software packages can meet all the requirements of a particular library. Each package has its own unique features and limitations. Hence, it is necessary to evaluate the library automation software with varying facilities according to the requirement. To determine the best package, analyze and identify the needs and match it with the features and functions of integrated library systems is important. Moreover, the library software should be selected to satisfy the present and prospective needs of the library.

To assess the value of software based on certain important check points, a comparative study is essential to understand any software. Therefore, this study is carrying out using the important checklist to be used for evaluation of software. It would help to librarian to know the benefits and limitations of particular software and to decide about the selection of a software package suitable for their own requirements.

7.1 How to Select the Software

Struggling with software selection process is extremely taxing on the average library professional. In particular technology, feature and functions, security and authentication issues, long-term cost, vendor viability, services and support, e.g., maintenance considerations, as well as training and documentation are to be considered for software selection with greater attention.

They are discussed in below.



7.1.1. Technology

Technology refers hardware and software. A suitable hardware and software is must for proper functioning of any library automation packages. Each software package should examine carefully, noting the type of hardware, the memory requirements, and the required system software. Determine whether additional peripheral hardware such as speakers, scanners, earphones, etc., will be necessary to make the program perform will require regularly upgrading equipment. The technology should be strong and capable enough to handle current and future transaction load. The system speed should be acceptable for daily usage. Software should support multi-company, multi-division, and multi-currency environments.

It can be seen that software package written in higher order programming language, such as COBOL, FORTRAN, BASIC etc. generally face problems in their maintenance, up-gradation, customization, etc. due to non-availability of suitable hardware.

7.1.2. Features and Functions

When reviewing potential software suppliers, many companies tend to focus only on the potential product's functionality and features.

Features

The factors like data storage techniques used in development of software, database structure file organization etc. must also be taken into consideration. It is also necessary to look up the facilities of importing, exporting and downloading the data from own computer to disc or, CD ROM etc. and its compatibility with Common Communication Format (CCF) / Machine Readable Catalogue (MARC) standard format.

Many librarians are confront to the issue of language. Identifying the programming language in which software is very important at the time of procurement or development of the package. Because many facilities such as fixed length, variable field length, variable format, search facility etc. are provided in the packages by using suitable programming language. Generally, customers or users have to face problems in the maintenance, up-gradation, customization, etc. due to inappropriate programming language in any library automation software.

Functions

A good library software package should be integrated modular software for the entire range of library activities. The main functions of software packages can be listed as follows:

1. Acquisitions
2. Cataloguing
3. Circulation
4. Online-Public Access catalogue
5. Serial Management
6. Report Generator

7. Interlibrary Loan
8. Community Information
9. Import/Export
10. Providing Reference Service

Besides this, some other factors also should be considered as functional level in selecting the software as following:

- Does this package meet the overall requirements listing?
- Is the menu structure easy to follow and understand?
- Are the help files easily assessable and easy for users to understand? Can the user customize help to meet the individual needs of the organization?
- Is the product overly complex or too sophisticated for the average user?
- Are there standard reports available and are they useful?

7.1.3. Cost

The cost of commercial software package varies considerably across the range of packages available except open source and free software. Most of the library automation software is costlier. Commercial software has initial purchase fees, licensing fees as well as up-grade fees. Moreover, the software designers also claim additional charges for customization, on-site training and data conversion from other DBMS / data sources, annual maintenance contract and customer support service. But the software developed locally might be cheaper price in comparison with foreign software. Some software package developed using open source and free software is available free of cost and offer only on the distribution charge. There are some other factors to be considered while selecting the software as following:

- Are the license costs justified given the functionality offering?
- Is the required database affordable?
- Are annual maintenance charges reasonable?
- What is ratio of software costs to the implementation cost?

7.1.4. Supplier Longevity

Supplier longevity is also very important factor to be considered before selecting the software that the numbers of years has the company been actively engaged in this software industry, when was the product's first released and what is the current release version being quoted. The reliability, customization and durability depend on the stability of the software designer and supplier. If the company has been consistency profitable year over year and the recent turnover has been on the management staff, there is no doubt on the company's longevity. Similarly, the costumer's reference is also supportive factor to take a decision.

7.1.5. Services

The most important factor is the service part of any software package for the library, because the library. The librarian can serve the people effectively, efficiently as well as rapidly with the help of automation using good library software package which is integrated by all required services.

In fact, the entire range of services available in selected packages can be divided in to three groups:

- i. Core services
- ii. Enhanced services
- iii. Value added services

i. Core Services

Core services are the basic services necessary for library routines and are recommended to be available with Library automation packages. The existence of any automation software depends on the available services, facilities and coverage of library and information activities in various modules. The different facilities in the library automation package are acquisition, cataloguing, classification, online public access catalogue (OPAC), circulation, serial control, information services, management, technical services and maintenance etc.

Academic libraries acquire not only the English language documents but also acquire documents available in various foreign languages for the research purpose. Therefore, the software should have the facility of multiple script acceptances.

ii. Enhanced Services

It includes the additional services of the modern library which make work of the librarian easy, comfortable and smooth. Customized report generation, GUI based user interface and color, interlibrary loan, multilingual support, union catalogue etc. are the examples of these type of services. Therefore, any software packages having more facilities certainly treated more suitable and advanced in comparison to those having limited facilities.

iii. Value Added services

Value added services are those types of services that are not generally included within a general scope of software packages. With the emergence of advanced technology, these types of services also became essential for the libraries of developed country for the users easiness and with the development of the software package this type of services are provided. Therefore, the best software is that which have these types of services and facilities. Self-circulation, self-reservation, online user training, stock verification facility, barcode generation, gate pass generations, RFID (Radio Frequency Identification) are the examples of value added services.

7.1.6. System support and maintenance

Especially the training, maintenance and documentation are included in the customer support services. It also includes publications (e.g. manual and newsletter) which contain information about latest development of the software. It helps to keep the users up to date in the latest development of the library software.

i. Training

The training of the library staff in computer operation is of vital importance. Every library staff member should be given a training and orientation about the computer system. The responsibility of the software designer or supplier does not end by selling the software without training until and unless the people learn entire operations of the software. Because the most important people in making library computerization successful are librarians. It must be realized that librarians will not be able to make any use of computer equipment until they are provided with the know-how required to use it. So, it is necessary to make training arrangements for the professional development of librarians.

ii. Maintenance

One should examine very carefully the support and maintenance arrangements being offered by the vendor/ supplier. Maintenance may include removing the bugs or errors that might become evident in the software as it is used for a greater variety of applications and improving the software.

Regarding maintenance, following things should be in mind in the software selection process:

- Does the software has De-bugging facility and scope of proper error message while executing the software
- How quick is non-critical software bugs fixed for the upgrading the software to adopt new technology?
- Is there any supplier for annual maintenance contract in discounted rate?

iii. Documentation

The reference manual with detailed written instruction (step by step) is necessary for using software package after training programme. The language of the manual should be easy to understand and should have a table of contents, glossary and index. It is

also important to know whether they have any regular newsletter or user information up-date publication regarding the library software

There are some other factors which are also very important to be considered at the time of software selection.

iv. Performance

Provision of searching the OPAC and web simultaneously (Meta search) using a single word search, search response time, search options, back-up facilities, database security etc. shows the performance of any library automation software.

The functions of packages are inter-related each other. The response time of the search module depends on different factors, such as file organization, operating system, hardware platform, numbers of records in database, etc.

v. Search Options

The search option include simple search, Boolean search, (AND, OR, NOT) Advanced search, string search, keyword search, field limitation search, truncation, use of related terms in searching. Provision of multiple manipulations and adequate searching capabilities must be in good characteristic software.

vi. Security

Security mechanism prevents the software from misusing database by the users and other people. For the safety purpose, the software should have following things:

- Provision of user id /barcode etc.
- Provision of access restriction to certain records/ fields.
- Provision for students and staff to log in and log off on their own
- Modification/ new version of the software obtain by the librarian

vii. User Friendliness

The system should be easy to use and check whether the system empowers the experienced user with short cut and flexible tool. The system should be easy to learn, menu driven and command mnemonic based. Besides the above criteria, copyright & licensing consideration is also important for evaluation of software.

7.1.7 Copyright & Licensing Considerations

All commercial software is copyright protected. The purchased package will contain a licensing statement to which the purchaser agrees by the action of opening the package. An advantage of the licensing agreement is that a registered owner (registration cards are also included in the software package) can usually obtain upgrades at far less than the full market price. Free software is not copyright protected. Usually referred to as “Public Domain Software,” such packages are freely copy-able and/or transferable. Other software, called “shareware” is offered freely to one and all through user groups or over the internet with the suggested provision that someone copying or downloading such a program voluntarily send a small amount of money to the creator/developer of the software.

CHAPTER VIII

8. Data Analysis and Presentation

The automation of university or other academic libraries has gone a long way in providing quality service and facilitating easy access to varied information sources cutting across space and time. Adoption of IT has not only saved the time of scholars, it also widened the access base of information sources. Library automation software packages being used in selected academic libraries in Nepal especially located in Kathmandu valley have been taken for the study. Data have been collected from automated academic libraries and it is also noticed that libraries that were not automated or that do not use commercially available software are not represent in the study.

On the basis of checklist and according to the questionnaire (in appendix) distributed to the librarian and information professionals the data has been collected.

Only Five softwares have been taken into consideration for the comparative analysis.

They are as follows:

1. Alice for Windows (AFW)
2. Software for University Library (SOUL)
3. LibInfo
4. Library Management System (LMS)
5. MIDAS Library Management System (MIDAS LMS)

The study deals with evaluation of library software used by seven academic libraries as followings:

S. No.	Name of the Institute	Abbreviation	Address
1	Tribhuvan University Central Library	TUCL	Kirtipur, Kathmandu, Nepal
2	Kathmandu University Central Library	KUCL	Kavre, Dhulikhel, Nepal
3	Institute of Engineering	IOE	Kathmandu, Nepal
4	Nepal Medical College	NMC	Kathmandu, Nepal
5	Appex College	AC	Kathmandu, Nepal
6	Public Youth Campus	PYC	Kathmandu, Nepal
7	Training Institute of Technical Instructor	TITI	Bhaktapur, Nepal

The questionnaire has been prepared on the criteria discussed above to fulfill the objective of the study. The data analysis and presentation is based on the response received from the librarians. Besides this, the literature written on respective library software package and personal interviews have been used in this comparative study.

According to the questionnaire, the data are analyzed from No. 5 (Software detail). In the introductory part of the questionnaire, the respondents have been asked about personal information, institutional profile, and library profile and library resources. The personal information section has been kept optional. Other three parts No.2-4 of the questionnaire are to obtain the information about the library and its parent organization. This information has been used to formulate the related chapter.

Collection Details of Selected Libraries of the Study

S. No.	Name of Institute	Resources	
		Books	Journals (Title)
1.	TUCL	3,00,000	450
2.	KUCL	40,000	200
3.	IOE	72,000	NA
4.	Apex	7000	50
5.	TITI	6000	50
6.	PYC	31,000	NA

8.1 Status of Automation

Computerization of the entire library house keeping operations like Acquisition, Cataloguing, circulation control, Serial Control and report generation etc. is known as library automation. Automation plays a vital role in this age of information explosion and library software is very important in library automation. Although knowing its importance by the librarian, they are not able to computerize their library due to various reasons. However some libraries have either fully computerized or partially computerized. The following libraries have used different commercial software packages to automate their libraries

Table No. 1: Status of Automation

Name of the Institution	Year of Automation starting	Year of completion	software used earlier	currently in use	Possibility of modification	Retrospective conversion	Kind of software
TUCL	2006	Not completed	CDS/ISIS	Lib Info	Yes	Yes	Proprietary
KUCL	2004	2005	CDS/ISIS	SOUL	Yes	Yes	Proprietary
IOE	2006	Not completed	CDS/ISIS	LMS	Yes	Yes	In-house
PYC	2006	2007	CDS/ISIS	MIDAS LMS	Yes	Yes	Proprietary
NMC	2006	Not completed	CDS/ISIS	Lib Info	Yes	Yes	Proprietary
AC	2005	2006	CDS/ISIS	LMS	Yes	Yes	In-house
TITI	2004	2005	----	AFW	Yes	Yes	Proprietary

Table 1 shows the general status of automation of different academic libraries and the automation has started in these libraries only after 2004. Although, TUCL is a pioneer university library in Nepal, It had started computerization since 1995 using CDS/ISIS for the bibliographic database and presently it has installed LibInfo integrated software package in 2006. The Kathmandu University Central Library started automation in 2004 with fully integrated Library software SOUL. All the software packages are proprietary software except LMS as it is in-house software at beginning but later it has started to sale.

More than 60% of selected academic libraries have completed automation viz., KUCL, PYC, AC and TITI by using SOUL, MIDAS LMS, LMS, and AFW respectively. TUCL, NMC and IOE all have started automation using LibInfo and LMS in 2006, and these libraries are still in progress.

The table reveals that all the selected libraries have been previously used CDS/ISIS to store their collection and accessing information through the computer catalogue. Apex College has created their own in-house library software package named LMS as their requirement.

All the above library automation softwares have the facilities of retrospective conversion from the CDS/ISIS database to newly installed software package.

8.2 General Information

The library automation software should be suitable in regard of flexibility, capacity, expandability, security, economically, user's friendly, module based and updated with the latest technology is to be procured.

General information about the Library automation software obtained by the librarians of selected academic libraries of this study has shown in the table. The table presents the origin of software, application domain, software developer/distributor and whether the local agent is available or not.

Table No. 2: General Information

Name of the software	Origin	Application Domain			Name of Distributor/Developer	Name of Local Agent
		Large System	Medium Range System	Small System		
AFW	Foreign	Available	Available	Available	Soft link Asia Pvt.Ltd., New Delhi	NA
Lib Info	Local	Available	NA	NA	Information Access Network, Pvt.Ltd. Nepal	Information Access Network, Pvt.Ltd. Nepal
SOUL	Foreign	Available	NA	NA	INFLIBNET, UGC, India	NA
LMS	Local	Available	NA	NA	Appex College, Nepal	Appex College, Nepal
MIDAS LMS	Local	Available	NA	NA	MIDAS Technology Private Ltd. Nepal.	MIDAS Technology Private Ltd. Nepal.

According to above Table, majority of the software viz., MIDAS LMS, LibInfo and LMS are locally developed packages. KUCL and TITI are using Library Automation Packages developed by external agencies or organizations. KUCL is the first university library in Nepal to automate its library using SOUL, developed by the INFLIBNET, UGC, India. TITI is using the ALICE for Windows (AFW) package of Softlink Corporation for automation. These software has not the local agent available in Nepal. Alice for Windows (AFW) has three types of databases suitable for any size of libraries such as small, medium and large.

It is found that out of seven libraries five have used locally made software. Although, these software are able to meet the general requirements of automation process in present situation, without testing the reliability and validity, it may occurs problem in a big university library.

8.3 System Requirements

Software package can not function properly without suitable hardware and software. Hardware is needed to be compatible with the operating system of the software. Therefore, the selection of software should be done on the basis of careful analysis of the basic hardware and software requirements for the package. Moreover, while selecting the hardware and operating system, it is important to check that whether it fulfills the present requirement, and would it meet the future requirements as well.

Table No. 3: System Requirements

Name of the Software	Operating system Requirements	Minimum Hardware Requirement
AFW	WIN98 ^{2nd} ed. /2000/ SP4	<ul style="list-style-type: none"> • Processor: Pentium III 700 or equivalent • 256 MB RAM • HD requirement: 2.1 GBs
SOUL	WIN 95/98/WIN NT	<ul style="list-style-type: none"> • Processor: Pentium III/IV • 128 MB RAM • HDD: 10 GB
Lib Info	DOS/WIN 95/98	<ul style="list-style-type: none"> • Processor: Pentium III /IV • 256 MB RAM • HDD: 10 GB
LMS	WINDOWS NT	<ul style="list-style-type: none"> • Processor: Pentium III/IV • 512MB RAM • HDD: 20 GB
MIDAS LMS	WINDOWS NT /XP	<ul style="list-style-type: none"> • Processor: Pentium III/IV • 128 MB RAM • HDD: 10 GB

Table 3 shows the minimum hardware and software requirement needed to execute respective Library Automation Software package successfully. Majority of the software is compatible with WIN 98 operating system.

8.4 Intrinsic Features

The inherent features in the product of software include the factors like data storage techniques, database structure, file organization etc. It is very important to identify the programming language while the commercial package is to be selected. Because many facilities such as fixed field, variable field length, variable format, search facility etc. provided in the package by using suitable programming language.

Table No. 4: Intrinsic Features

Name of the Software	Programming Language used for Development	Data Storage Technology
AFW	C++MS SQL Server	Relational Model
SOUL	MS SQL	Relational Model
Lib Info	PHP/MS SQL	Relational Model
LMS	SQL/JSP	Relational Model
MIDAS LMS	Delphi / SQL	Relational Model

Table 4 represents the inherent features of LMS packages. It is clear from the above Table that although the programming languages are varied, data storage technology of all the LMS packages is similar.

8.5 Library Automation Services/ Operations

An automated library is one where a computer system is used to manage one or several of the library's key functions such as acquisitions, Circulation, Cataloguing, Serials control and the online public access catalog. The automation is economically feasible and technologically required in modem libraries to cope up with the requirements of new knowledge, the enormous increase in the collection of materials, problems of their acquisition, storage, processing, dissemination and transmission of information

Library automation software covers two major functional areas, namely a) control and management of library resources b.) Access to documents and information. These

two areas deal with library house keeping system and text retrieval systems respectively. There is a provision for library house keeping operation, public access of information, producing publications as well as control and manipulating statistical and financial data. Besides this, barcode generation, network support, data conversion, multimedia support etc. are other additional features of library automation software that are given as in following table.

Table No. 5: Library House Keeping Operations

Core Services	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Acquisition	Y	Y	Y	Y	Y
Cataloguing	Y	Y	Y	Y	Y
Circulation	Y	Y	Y	Y	Y
OPAC	Y	Y	Y	Y	Y
Serial Control	Y	Y	Y	Y	Y
Library Administration	Y	Y	Y	Y	Y
Bibliographic Format Support	Y	Y	Y	Y	Y
Data Exchange Format Support	Y	Y	Y	Y	-
Article Indexing	Y	-	X	-	-
Retrospective Conversion	Y	Y	Y	Y	-
Report Generation	Y	Y	Y	Y	Y
Barcode Generation	Y	Y	Y	-	Y
Support of Networking	Y	Y	Y	Y	-
Various Security options	Y	Y	Y	Y	Y
Stock Verification facility	Y	Y	Y	Y	Y

Table 5 shows the status of automation of housekeeping activities in different academic libraries. It presents all the major core services which should be available in each library automation software packages that are necessary for the daily library operation. All of the core services are available except in MIDAS LMS. Article indexing is available only in Alice for Windows. Locally developed software, LMS has no the provision of barcode generation and MIDAS LMS is lacking some services, such as Data Exchange Format, article indexing, Retrospective conversion and Network support.

8.6 Acquisition

Acquisition is the process of building collection to the library on the basis of which all the services of library are organized. This module takes care of all the operations involved in acquisition of monographs, conference proceedings, and reports etc. from receipt of these documents on approval to accessioning them. The acquisition system generates various processes like accepting requests for items procurement, accepting list of items available from them, getting approvals and sanctions from proper authorities, formation of purchase lists, receiving items against order, maintaining information on publishers and suppliers.

Table No.6: Acquisition Module

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Integration with other modules like, cataloguing, Circulation, OPAC, etc.	Y	Y	Y	Y	Y
Ordering Books and Serials	Y	Y	Y	Y	Y
Rejection of Books	Y	Y	Y	Y	Y
Returned of rejected Books	Y	Y	Y	Y	Y
Receiving of Ordered Books	Y	Y	Y	Y	Y
Invoice Processing	Y	Y	Y	Y	Y
Accounting/Budgeting	Y	Y	Y	Y	Y
Modification in orders and approval	Y	Y	Y	Y	Y
Updating of database in case the document is					
- Weeded out	Y	Y	Y	Y	Y
- Disposed	Y	Y	Y	Y	Y
- Lost	Y	Y	Y	Y	Y
- Withdrawn	Y	Y	Y	Y	Y

Table 6 shows the menu and options which consist of Acquisition module. All the given options are available in all software.

8.7 Cataloguing

A catalogue is an organized record of the stock of a library. The primary objective of the cataloguing module is to create user access catalogues either by online or CD-ROM or microform. Cataloguing module includes programs for bibliographic description of acquired publications, and the storing of that information in the database. It allows description of monographs and periodicals, and creation of piece-analytic bibliographic records as required by MARC, UNIMARK, or CCF format. Import-export module for the bibliographic exchange with other libraries based on ISO 2709 standard. This module also includes authority control file, catalogue database, shelf list file etc. It can generate the cataloguing system based on AACR-2. The catalogue cards can be directly prepared using full-text formatting flexibility. It is designed to catalog item entered in this system on line (through computer).

Table No. 7: Cataloguing Module

Available Menu and Options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Integration with other modules like, acquisition, Circulation, OPAC, etc	Y	Y	Y	Y	Y
Retrospective Conversion	Y	Y	Y	Y	-
Printing Catalogue Cards					
- Author card	Y	Y	Y	Y	Y
- Title card	Y	Y	Y	Y	Y
- Subject card	Y	Y	Y	Y	Y
- Classified card	Y	Y	Y	Y	Y
Book Cataloguing:					
- Duplicate checking	Y	Y	Y	Y	Y
- Modification of existing entry	Y	Y	Y	Y	Y
Online Public Access Catalogue (OPAC)	Y	Y	Y	Y	Y
List of Latest edition	Y	Y	Y	Y	Y
Import from CD-ROM	Y	Y	Y	Y	Y

According to table 7 all the options of cataloguing module are available in all software. Only the retrospective conversion is not developed in MIDAS LMS package.

8.8 Circulation

The circulation activities of any library are vital. Always it can be seen very long queues in front of the circulation desk especially in academic library. Transaction of information manually is very hard and time consuming. Circulation staffs are predominantly engaged in clerical functions like issue, return, renew, filing of book cards generating overdue notices, calculating and collecting fines, placing reservation and maintaining statistical records of library materials circulated. Therefore, to reduce the waiting time of the user and to minimizing the need of labor, integrated software for library automation is very necessary and it should be acquired. The circulation module and its general options that should be available in the good software is given in Table 8.

Table No. 8: Circulation

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Integration with other modules	Y	Y	Y	Y	Y
Reservation	Y	Y	Y	Y	Y
Check in and Check out	Y	Y	Y	Y	Y
Flexible issue period	Y	Y	Y	Y	Y
Automatic fine calculation for different user category	Y	Y	Y	Y	Y
Automatic due date for Issued date	Y	Y	Y	Y	Y
Interlibrary Loan	Y	Y	-	-	-
Current Awareness List	Y	Y	Y	Y	Y
SDI	Y	-	-	-	-
Email support	Y	-	Y	Y	-
<u>Membership</u>					
- New	Y	Y	Y	Y	Y
- Renew	Y	Y	Y	Y	Y
- Cancel	Y	Y	Y	Y	Y
<u>Report Generation</u>					
- Transaction Log	Y	Y	Y	Y	Y
- Fine	Y	Y	Y	Y	Y
- Reminders	Y	Y	Y	Y	-
- Member List	Y	Y	Y	Y	Y
- Interlibrary loan	Y	-	-	-	-
- Notices	Y	Y	Y	Y	Y
- Publication	Y	-	-	-	-
- Spine Label	Y	Y	Y	Y	Y

Table 8 presents the circulation module and its common options needed for the transaction of information in the library and some other functions like membership, inter-library loan, report generation etc. Although an Inter-library loan is one of the important services of library which helps to create relationship between different libraries providing their lacking information. But three of the above Library software packages are not having this service. Only the AFW and SOUL have this facility. Similarly, all do not have the SDI and publication services except AFW. MIDAS LMS package is also lack of reminder and e-mail facility.

8.9 Serial Control

Serial control system supports new serials renewal gifts and exchange items. It also takes care of all ordering activities like approval sanction payment etc. and billing procedures include supplementary bills and credit notes. It also supports the reminders generation system. It can prepare the bibliographic and subscription detail. It registers both ordered and non-ordered serials, gift exchange and finally for a complete volume passes on to binding control for binding.

Table No. 9: Serial Control Module

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Integration with other modules like, Circulation, OPAC, etc	Y	Y	Y	Y	Y
Acquisition of Serial	Y	Y	Y	Y	Y
Orders, approvals and invoice processing	Y	Y	Y	Y	-
Subscription Control	Y	Y	Y	Y	Y
Renewal of Serials	Y	Y	Y	Y	Y
Claim monitoring	Y	Y	Y	Y	-
Electronic mail Support	Y	-	Y	Y	-
Budget Approval	Y	Y	Y	Y	Y
Currency conversion	Y	Y	Y	Y	Y
Record Keeping	Y	Y	Y	Y	Y
Reminders					
- By Title	Y	Y	Y	Y	-
Report Generation					
- All serials	Y	Y	Y	Y	Y
- Current Serials	Y	Y	Y	Y	Y
- Rejected Serials	Y	Y	Y	Y	Y

The table 9 presents the detail of serial control in automation system. It has shown all the elements consist in serial control module. Some options are not available in MIDAS LMS packages like orders, approvals and invoice processing, claim monitoring, electronic mail support and reminders.

8.10 Online Public Access Catalogue (OPAC)

An OPAC is a database of bibliographic records describing the holdings of particular library. It allows fast and accurate retrieval of data through different access points by name, title and subject and offers online access through public terminals. Data can be retrieved by selecting terms from access point dictionaries, where the user need not type out the query or through string search which permits the user to search on any part of the title. Boolean operators AND, OR, NOT can also be used in keyword searching. Multiple operators may be used in single search to narrow down or broaden the search outputs. Search outputs can be printed or displayed in catalogue card form as per AACR2 cataloguing rules. When more than one records meets the search criteria, browse or summary list of the titles are immediately displayed. The user can select the relevant record and look at the complete details of the selected document.

Table No. 10: OPAC (Online Public Access Catalogue)

Variables	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Author Search	Y	Y	Y	Y	Y
Title Search	Y	Y	Y	Y	Y
Classified Search	Y	Y	Y	Y	Y
Subject search	Y	Y	Y	Y	Y
KWIK Search	Y	Y	Y	Y	-
Boolean search	Y	Y	Y	Y	-
String search	Y	Y	Y	Y	-
Online printing of search result	Y	Y	Y	Y	-
Off-line printing of search result	Y	Y	Y	Y	Y

Table 10 shows the different kinds of search options that are necessary for being good library software, but the fact is that all of above software has not included all the search options. MIDAS LMS provides only author, title, subject and classified search.

8.11 Article Indexing

Article indexing plays a vital role in research for the research scholar to find the current information from the particular journal. Much new advanced automation software include article indexing module which is used especially in special library, research library and research centers. Generally this module includes abstract, article cataloguing, CAS and SDI on article database etc.

Table No. 11: Article Indexing

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Entry of articles with abstracts of flexible length	Y	-	-	-	-
Variable and sufficient field length for defining keywords or descriptors	Y	-	-	-	-
Article cataloguing	Y	-	-	-	-
Catalogue card for article	Y	-	-	-	-
CAS on article database	Y	-	-	-	-
SDI on article database	Y	-	-	-	-

The above table shows the different menu and options of article indexing service. The table reveals that the article indexing available only in Alice for Windows (AFW) software. Rest of the software does not have this module.

8.12 Software Security

Security measure in automation software is an essential part. It prevents the software from misusing database by unauthorized person. For the safety purpose, the software should have following mechanisms:

- Provision of user id /password/barcode etc.
- Provision of access restriction to certain records/ fields.
- Provision for students and staff to log in and log off on their own
- Modification/ new version of the software obtain by the librarian

Table No. 12: Security options

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
User ID and password for each authorized user	Y	Y	Y	Y	Y
Authorized access to user at module level	Y	Y	Y	Y	Y
Authorized access to users at function level	Y	Y	Y	Y	Y

The table shows the provisions required for the security of software. Table reveals that all the software has provision of user ID and password for each authorized user, authorized access to user at module level, authorized access to user at functional level.

8.13 Data Entry Features

It is self explanatory. In each module, except OPAC there should be provision for data entry and updating /editing. There should be facility for protection of these facilities so that only legitimate users can enter or update data. Knowing the maximum number of records that can be hold in a database, question was formed to find out the capacity for total number of records in database, software compatibility, format adoptability; fields in software, supporting technology, supporting input/output devices and effectiveness of the software were asked from the librarian.

The fields in library software can be user defined, system defined, of variable length or of fixed length. It is also an important factor to know while selecting library software package for automation. To maintain a consistency in a data entry, there are various recognized formats available like MARK, CCF, and UNIMARC etc. However a library can also design its own format.

Table No. 13: Data Entry Features

Name of the Library Automation Software package	Limits in number of records	Standard Format Adoptability	Fields in software	Input Output Device Support
AFW	Unlimited	MARC	System Defined	Yes
SOUL	Unlimited	MARC- 21	System Defined	Yes
Lib Info	Unlimited	MARC	System Defined	Yes
LMS	Unlimited	-	System Defined	Yes
MIDAS LMS	Unlimited	-	System Defined	Yes

Above table shows all the software has unlimited number of records. Similar format adoptability has been used and data also reveals that all the software packages have system defined fields. Similarly, majority of the software has used MARC format which is also known as US MARC. But LMS and MIDAS LMS have developed their own format.

8.14 Enhanced Service

Libraries have expanded on the library management systems to incorporate OPAC, CD-ROMs, networks, desktop publishing, office automation, Multimedia interface, etc. Library technology also involves the use of Xerox machine to microfilm machines and barcode reader to electronic security gate. There is hypermedia, multimedia, virtual reality, etc.

Table No. 14: Enhanced Service

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Customized report generation	Y	Y	Y	Y	Y
Interlibrary loan module	Y	Y	-	-	-
Multilingual support	Y	Y	Y	Y	-
Union catalogue	-	-	-	-	-
Reservation facility	Y	Y	Y	Y	Y
Authority file support	Y	Y	Y	Y	Y
Online Help	Y	-	-	-	-
Online tutorial	Y	-	-	-	-
Search facility	Y	Y	Y	Y	Y
Internet support	Y	Y	Y	Y	-
Intranet support	Y	Y	Y	Y	Y
Web OPAC	Y	Y	Y	Y	-
Multimedia Interface	Y	Y	Y	Y	-
Barcode Support	Y	Y	Y	-	Y
Backup	Y	Y	Y	Y	Y
Easy installation Procedure	Y	Y	Y	Y	Y
Reprographic Equipment Support	-	-	-	-	-

Table 14 depicts that all the software have enhanced support services more or less. It is remarkable that none of the software has union catalogue and reprographic equipment support services. LMS has not the barcode support service. Online Tutorial help facility is available only in Alice for Windows. In comparison of other software MIDAS LMS provides very little support for enhanced services such as Interlibrary loan, Multilingual support, Union catalogue, Online Help, Online tutorial, Internet support, Web OPAC etc.

8.15 Value Added Services

Library automation involves total computerization of library activities starting from acquisition, to management and circulation to reference service. With the development of the software package this type of services are provided. Self-circulation, self-reservation, online user training, stock verification facility, barcode generation, gate

pass generations, E-mail Reports, Patrons ID generation , Digital Camera Support, Electronic SDI and CAS support, RFID (Radio Frequency Identification) usage etc. are the examples of Value Added services which are presented in following table.

Table No. 15: Value added Services

Available Menu and Options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Patron Self-circulation	Y	-	-	-	-
Online Training	-	-	-	-	-
Barcode Generation	Y	Y	Y	-	Y
Gate pass generations	Y	-	-	-	-
E-mail Reports	Y	-	-	Y	-
Patrons ID generation	Y	Y	Y	Y	Y
Digital Camera Support	Y	Y	Y	Y	-
Electronic SDI and CAS support	-	-	-	-	-

Table 15 shows none of the software packages provide the online Training and Electronic SDI & CAS support. Alice for Windows support patron self-circulation and gate pass generations which are not supported by other software. MIDAS LMS supports only barcode generation and patrons ID generation services. The table reveals that most of the software provides very low levels of value added services except AFW.

8.16 Performance

An ultimate goal of the automation software of library is to get the best result by showing its performance. Provision of searching the OPAC and web simultaneously (Meta search) using a single word search, Search response time, search options, back-up facilities, database security etc. shows the performance of any library automation software.

Table No. 16: Performance

Name of the Software Package	Ease of Searching Documents	Average Time Needed to Retrieve Data	Easy of Learning Software	Database Security Mechanism	Ease of Creation of New database
AFW	Yes	Less than one minute	Yes	Available	Yes
SOUL	Yes	Less than one minute	Yes	Available	Yes
Lib Info	Yes	Less than one minute	Yes	Available	Yes
LMS	Yes	Less than one minute	Yes	Available	Yes
MIDAS LMS	Yes	Less than one minute	Yes	Available	No

Above table shows all the software have similar facilities, easy to search and easy to learn the databases. According to the table, all the packages take less than one minute to retrieve the data; all packages have database security mechanism to check authorized use of software, ID, password and restriction of access of certain records and modules.

8.17 Documentation

Reference manual with detailed written instruction, instruction booklet etc. is necessary to run the library automation software package successfully. Reference manual can be used to bridge the lacuna occurring after the training program. Manual plays an important role to operate, understand and learn the software easily. A good manual should have table of contents, Glossary, Index as well as help Option which are presenting in table given below.

Table No. 17: Documentation

Name of Software Package	Manual	Form of Manual	Table of Contents	Glossary	Index	Help Option
AFW	Yes	Hard copy	Yes	Yes	Yes	Yes
SOUL	Yes	Hard copy	Yes	No	No	Yes
Lib Info	Yes	Hard/soft copy	Yes	Yes	Yes	Yes
LMS	No	No	No	No	No	No
MIDAS LMS	No	No	No	No	No	No

According to above table 17 Alice for Windows have good manual with all features. Manual helps to understand the software easily. SOUL has manual excluding glossary and index. According to the librarian, LMS and MIDAS LMS do not have a manual and very soon they are going to develop it.

8.18 Customer Support Service

Providing training and maintenance of the package is essential aspects under the customer support service. Training is very important. The supplier should specify the support, provided with the software. Some software has associated user groups and user group membership, which may prove to be a valuable source of information for the package. Software producers usually bring newsletter or user information update publication, which updates the users about the new development of the software.

Table No. 18 Customer Support Service

Available menu and options	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
On call support	Y	Y	Y	Y	Y
On site support	Y	Y	Y	Y	Y
Continued software updating	Y	Y	Y	Y	Y
Real Time Internet Support	-	-	-	-	-
Training	Y	Y	Y	Y	Y
User Group Service	-	-	-	-	-
E-mail discussion group	Y	-	Y	Y	-
Newsletter Service	-	-	-	-	-

Table 18 presents all the software packages are provided on call support, on site support, continued software updating, and training. But the remarkable factor is that all of them have not the facility of Real Time Internet Support, User Group Service and Newsletter Services.

8.19 Cost of Software

The purpose of commercial software vendor is to earn money as well as goodwill providing reliable and internationally standard software. They cannot provide the software free of cost. Commercial software has initial purchase fees, licensing fees as well as up grade fees. Moreover, the designers also claim additional charges for customization, on-site training, and data conversion from other DBMS / data sources, annual maintenance contract and customer support service. But locally developed softwares are cheap in price in comparison with standard certified software. Some software packages which is developed by using open source software can be available free of cost and offer only distribution charged. The cost of software, term and condition, annual maintenance charge and availability of update version are given in following table.

Table No. 19: Cost of Software (As on August, 2007)

Details	Name of the Software				
	AFW	SOUL	Lib Info	LMS	MIDAS LMS
Actual cost of software	US \$ 6,000/-	IC Rs.50,000/-	NC Rs. 75,000/-	US \$ 2,000/-	NC Rs.30,000/-
Term and condition of Availability of software	Purchase	Purchase	Purchase	Purchase	Purchase
Maintenance facility	Yes	Yes	Yes	Yes	Yes
Cost of annual Maintenance	£250	Not given	Rs.15,000- 30,000	Free	Rs. 5,000
Availability of updated version (Free/charge)	Free	Free	Free	Charges	Free

Above table reveals that all the softwares are commercial software packages. AFW seems little costly among all software which is for around US \$ 6,000, SOUL is available for IC Rs.50,000, LibInfo is for NC Rs. 75,000, LMS is US \$ 2,000 and MIDAS LMS is available only in Nepalese Rs.30,000. Updates of these software are provided free of charge when they developed except LMS packages though it has not mentioned how much they charge. Regarding the maintenance, Annual Maintenance Contract (AMC) is available for all packages services. The SOUL has not mentioned whether the supplier will charge the money or not. Supplier of LMS does not charge

for the maintenance, they will provide free service. But AFW, LibInfo and MIDAS LMS charges £250, Rs.15, 000-30,000, Rs.5, 000 respectively.

8.20 Rating the Software

To determine how strongly software holds its competitive position is to quantitatively assess whether the software is stronger or weaker than close rivals on each software key success factor and each competitively essential resource and capability. Competitive analysis reveals the key success and competitive capabilities that separate software stronger from weaker. Competitive analysis and benchmarking data provide a basis for judging the strengths and capabilities of rivals on such competitively important factors in software such as technology (programming Language), house keeping operations, service and support, longevity, OPAC, feature & function and internationally recognized.

Table No. 20: Rating of the Software

A. Unweighted Overall Strength Rating

Variables	Name of the Software				
	AFW	SOUL	LMS	LibInfo	MIDAS LMS
Key Success Factor/Strength Measure					
Technology (Programming Language)	9	8	8	8	8
House Keeping operations	10	9	7	9	7
Service and support	9	8	7	8	7
Longevity	10	9	5	5	5
OPAC	9	8	7	7	6
Feature & function	10	9	7	8	7
Internationally recognized	10	8	3	4	3
Unweighted overall strength rating	68	60	44	49	43
Ranking	1	2	4	3	5

Rating Scale: 1=very weak, 10=very strong

B. Weighted Overall Strength Rating

Key Success Factor/Strength Measure	Weight	Name of the Software				
		AFW	SOUL	LMS	LibInfo	MIDAS LMS
Technology (Programming Language)	0.20	1.80	1.60	1.60	1.60	1.60
House Keeping operations	0.20	2.00	1.80	1.40	1.80	1.40
Service and support	0.15	1.35	1.20	1.05	1.20	1.05
Longevity	0.10	1.00	0.90	0.50	0.50	0.50
OPAC	0.10	0.90	0.80	0.70	0.70	0.60
Feature & function	0.15	1.50	1.35	1.05	1.20	1.05
Internationally recognized	0.10	1.00	0.80	0.30	0.40	0.30
Unweighted overall strength rating	1.00	9.55	8.45	6.60	7.40	6.50
Weighted Overall Strength Rating		1	2	4	3	5

Rating Scale: 1=very weak, 10=very strong

The above table shows the consolidated scores of five evaluated software packages. Comparison of unweighted and weighted overall strength scores shows that Alice for Windows (AFW) is the best performer and is in the 1st competitive position having a consolidated score of 68 (9.55). SOUL seems in second position with a score of 60 (8.45). This was followed by LibInfo with scores of 49 (7.4) and LMS with a score of 44 (6.60). MIDAS LMS has low score with 43 (6.50). Note that the consolidated scores were obtained by summing all category scores after normalizing by their respective category weights.

CHAPTER IX

9. Summary, Findings and Recommendation

9.1 Summary

During the past few years we have seen tremendous changes around the world in technological field. With the help of modern information technologies work can be done more effectively and efficiently than before with less labour force. Numerous organization are managed to improve their productivity, efficiency and profitability using information technology. In order to increase productivity and profitability these advance IT can be used in any sector, organization and department. The library is the most important place to use such technologies to perform its work effectively and efficiently.

This study has been presented with the different types of software used in academic libraries in Nepal. The comparative study is particularly of the commercial software and provided guidelines in the selection and development of appropriate software to the library professionals. The main purpose of the study is to provide some basic idea to librarians, which may be helpful for selecting a suitable library automation software package.

The introduction of computers into libraries is impacting library and users expectations. Establishment of the computerized system in the library is the felt need to serve the teachers, researchers and all readers of the university, colleges and the nation. Computerization will be useful to satisfy not only the readers but also to make the library operations fast, easy and transparent. Library automation is very much needed in academic libraries. Librarians need to have thought and discussed integrated software for library automation for their respective libraries. Because there is a strong need to provide web based library and information support services to end users for

assisting them in achieving excellence in academic activities, R&D work, consultancy and interaction with external environment.

Among the university libraries Kathmandu University is using SOUL software and Tribhuvan University Central Library still has CDS/ISIS and presently installed LibInfo integrated software. Similarly, Pokhara University and BPKIHS Library have used WINISIS and the rest of the universities have kept aloof from the computer to their library. However, some college libraries are trying to enter in automated environment using new software.

The selection of right software is always a difficult task for library managers. The present need, long term requirements, hardware & software requirements, financial resources of the library and customer support from software developers must be kept in view at the time of selection of any automation software. The software designed and developed by the commercial software houses are little costly. Moreover, after the warranty period, the services like software updating, trouble-shootings and annual maintenance etc. are also highly priced and naturally place heavy recurring financial burden.

However, an evaluation is very important for selecting the appropriate software for the automation of the library. There are many directories and other tools available that help librarians to select suitable software for their libraries, but it is not enough to choose the correct one. Therefore, the study has provided guidelines in the selection or development of appropriate software packages to Nepalese librarians. For the selection of particular software, the software selection team needs to devote greater attention in the areas of technology, services and functions, security and authentication issues, long-term cost and maintenance considerations, vendor viability, as well as training and documentation of the software. The study comparatively analyses the commercial software (SOUL, AFW, MIDAS LMS, LibInfo, LMS) used in the library of academic institutions in Kathmandu.

To be successful in the present century, libraries have to be more proactive and more customer service oriented. The main challenges faced by academic libraries are technological challenges, lack of funds, lack of expertise, lack of training, lack of interest on library management, lack of national information policy (NIP), irregular supply of electricity, LAN/WAN, frequent break down of computers and internet link.

9.2 Findings

1. There are six universities and one deemed university in Nepal. The total number of affiliated, constituent and private colleges all over the country under these universities is about 548. Out of the 548 colleges, 246 colleges are situated in Kathmandu. Among them only 30 libraries including university have been studied where they are automated their libraries. Other libraries are not included because they have not used any library software for automation in their library
2. The majority of the academic libraries 17 (56%) out of 30 are using free software CDS/ISIS and WINISIS. Only 9 (30%) libraries have used other commercial software and 5 (16%) have used in-house software which have been made by students as their project work for the automation of their library.
3. It is also found that only 6 public academic institutions out of 12 have used CDS/ISIS and 14 private academic institutions out of 18 have used CDS/ISIS and in-house software. It is clear that the librarians of public institutions are more conscious and aware about the library automation rather than the librarian of private institutions. However, either public or private, most of the academic institutions are still using CDS/ISIS.
4. Most of the academic libraries in Nepal are using the UNESCO's software CDS/ISIS and WINISIS more popularly due to its free distribution. The other reasons are availability of the training provided by many training institutions

and even prescribed in the Syllabus of Masters Degree in Library and Information Science, TU.

5. All the selected libraries have been using CDS/ISIS to store their collection and accessing information through the computer catalogue and all the software has the facilities of retrospective conversion from the CDS/ISIS database to newly installed software package except MIDAS LMS.
6. Majority of the academic libraries have used locally developed software.
7. Findings of software packages being used in selected academic libraries:
 - All housekeeping activities are handled in all library automation software. But some enhanced and value added services are lacking in local software like LMS and MIDAS LMS.
 - Programming languages of the selected software are varied, but data storage technology of all packages is similar.
 - Only the AFW and SOUL have inter-library loan facility.
 - MIDAS LMS has not certain elements of serial control module like ordering, approval and invoice processing, claim monitoring, electronic mail support and reminders.
 - Although the automation of article indexing plays a vital role in research, it is available only in Alice for Windows (AFW) software.
 - Barcode generation is not available in LMS package.

- LMS and MIDAS LMS have not followed the MARC data exchange format in data entry but they have developed their own format.
 - MIDAS LMS has not provided some services, such as data exchange format, article indexing, retrospective conversion and Network support.
 - Based on the rating scale Alice for Windows is the best software among the selected software.
8. Besides academic libraries, public and other libraries like British Council and SAARC Center of Tuberculosis has installed the library automation software ALICE for Windows (AFW) and American library has used 'Sage Brush Info center'.

9.3 Major Issues

9.3. 1. Local Made Software

From the survey it is found that most of the academic libraries have used local made software package for the automation. TUCL has recently installed local made software LibInfo. It is also found that many other private college libraries are using simple database only for the record keeping matter which is created by the students as a project work. These types of database have either house keeping operations or other facilities which may create problem in future by losing its record and debugging the data.

9.3. 2. Lack of Trained Manpower

There are very limited skilled manpower in an academic libraries in Nepal. As a result, they cannot provide proper services to the students, faculties and researchers. There are non-library professional workings in some university and college libraries.

The data shows that less than 15% colleges and university libraries out of 548 of Nepal are having trained manpower. Even in Kathmandu University Central Library which is known as first automated academic library in the country has only one professional librarian. Most of the professional librarians are centered in Kathmandu Valley. Due to the poor facility and less opportunity, they are not interested to go out of the Kathmandu.

9.3. 3. Lack of Training Facility

Most of the staff in academic libraries in Nepal are trained in traditional librarianship. They are finding it difficult to cope with the requirements in the electronic age. Unless and until the library staff is not trained with new technology it will be impossible to use new software. In absence of these things library will not be able to provide quality service effectively and efficiently. They can not provide current information which is available online. Most of the academic institutions do not give preference to the in-house as well as out side training for the library staff.

9.3. 4. Inadequate Funds

Almost all university and college libraries in Nepal are facing financial constraints. Due to lack of sound financial position of the libraries, they can not provide the required information to the users. Government colleges and universities are provided with inadequate fixed budget and there is no other source of income.

9.3. 5. Lack of National Information Policy

There is no government agency to look after all the activities of library and information centers. Policy formulation, need identification and recommendation for library services in different areas and subjects and their regular monitoring and evaluation are not being carried out by any recognized organization. There is no organization in Nepal holds the responsibility in the development of National Information Policy (NIP) and coordinate the activities.

9.4 Recommendations

The following recommendations are made based on the findings of this research. The recommendations are made to serve as a guide to all libraries in general and especially university and college libraries in Nepal which intend to automate their library processes. The recommendations are for university and college administrations, librarians, other librarians and policy makers.

9.4.1 Installation of Standard Software Package

The standard library software should be installed to satisfy the present and prospective needs of the University and college library. Because these types of softwares are more reliable, efficient; flexible, expandable, safety, user friendly, module based and updated with the latest technology.

In the context of Nepalese scenario very few academic institutes have used these types of software. Most of the colleges and university libraries are using local made software packages which facilitated a very few library operations & services and might bring problems in the long run. Some of these software are not also acceptable as international standards of **AACR-2**, **CCF**, **MARC 21** and **ISO 2709** etc. Therefore it is recommended that universities as well as college libraries should use standard library software for their automation.

The study shows that Alice for Windows (AFW) is the best library software among five commercial software used in Nepalese academic libraries. It has three types of modules suitable for any size of library and has four distinct versions –such as Public Library Version, Special Library Version, Academic Library Version and School Library Version. Therefore any type of organization can use this software.

Similarly, Software for University Libraries (SOUL) is suitable software for university libraries developed by the INFLIBNET and used across India (installed in

1384 Institutions) and other countries. Kathmandu University, Nepal has also used SOUL. It is also available in college library version. SOUL adheres to internationally acceptable standards like AACR-2, CCF, MARC 21 and ISO 2709. It is flexible enough to be used for automating any type or size of library at an affordable cost.

In Nepal, It can be seen that many libraries are willing to shift from ISIS to other software due to not capable of handling the library functions especially the large volume of circulation, acquisitions, periodicals control and accounts related functions. So it is recommended the AFW and SOUL are the standard software for the library automation.

9.4. 2. Trained Manpower

Librarians should be taught skills, which will enable them identify appropriate software for their library needs. The most important people in making library computerization successful are librarians. They know their job well and should be most qualified to decide which function should or should not be computerized.

The sufficient number of professional manpower for the libraries in the country is still lacking. Therefore, many college and university libraries have not required number of professional librarians. It is unfortunate that Purvanchal University and Mahendra Sanskrit University have no professional staff in the library.

Tribhuvan University, Department of Library and Information Science (DLIS) has M.L.sc course which produces 22 professionals each year. However, this course helps to fulfill the requirements of the country. For automation to be successful in academic libraries in Nepal, it is recommended that such libraries encourage their professional staff to study at least the diploma level in computer science or some equivalent qualification. Alternatively, LIS degree courses should have an extensive computer science aspect in their curricula.

Furthermore, the planning commission should devise a suitable strategy for manpower development. Certain objectives norms and standards should be prescribed for uniform pattern of training and education in LIS in the country. Other universities should also start the course of LIS for competitive professional education. The short term training courses in library automation should be conducted regularly.

9.4.3 Training Facilities

Training is the most important activity that plays an important role in the development of librarian.

Most of the Nepalese academic institutions do not give preference to train the library personals. Therefore, it is recommended to develop and provide training opportunities suitable to train library staff on the use of computers, especially on the use of existing software and hardware with adequate practical experience. These training opportunities will help to overcome the problem of insufficient skilled and trained staff. Training makes people more competent, personnel become committed to their job resulting in proactive-ness, increases productivity, reduces cost and enhances skill and knowledge of the employee and helps in developing a problem solving attitude and gives people awareness of rules and procedures. Therefore, training should be continuous.

Training can be either on the job or off the job. In the first case, the worker is trained under the guidance of a supervisor whereas off the job training is usually through lectures, conferences, case studies, audio visual etc.

Therefore, it is essential to provide training of library as well as software packages and advance course of computer to all of the staff and executives of the organization to make them competent and able to handle various problems regarding modern information technology.

9.4. 4. Adequate Funds

The various information services that can be deployed in libraries are dependent on sound financial position of the libraries. The escalating cost of the reading materials on one hand and huge cost of the infrastructure on other have made the academic libraries to suffer from insufficient flow of funds. Similarly, day to day the price of the software is rising up with the number of value - added services and enhanced services incorporated in the library automation package. Due to the high cost and lack of fund, library can not afford for international software for the automation of the library.

Therefore, sufficient funds should be made available by the university and college administrations to automate their libraries. The following institutions may also involve in funding for the library automation:

- University Grant Commission should also provide the grants in the initial stage of automation project.
- Similarly, University also should play active role for fund raising activities.
- The colleges and university should also collect certain additional charges at the time of admission from every student, and it should be expended only for the library automation purpose.

9.4. 5. National Information Policy

Formulation of a Special Committee for Library Automation Project

The task of evaluation of the library software may be done at national level. Software Evaluation Committee (SEC) should be constituted for the purpose. It is also suggested to appoint an IT committee in each university library including both library and computer staff to deal with automation activities. The committee should evaluate the library software package before implementation.

Hence there is a need for SEC at national level. This committee should regularly review the progress and propose developments. The committee discusses problems and obstacles and find solutions, persuade the UGC or higher management to provide adequate funds needed for automation of libraries and for the maintenance of automated libraries.

9.4. 6. Automation and Networking of Libraries

In the age of information explosion, there has been a growing problem with the collection, processing, storage and dissemination of information. Exchanging and sharing of widespread information resources between the libraries of the world has been made easy by computer and telecommunication technology. For this purpose, it is essential to take immediate steps for automation and networking of the libraries for effective and expeditious service to the students, faculties and researchers

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ANNEXURE

QUESTIONNAIRES

Library Software Packages used in University and College Libraries of Nepal: a
Comparative Study

1. Personal data:

- I. Name:
- II. Designation:
- III. Contact Number:
- IV. Telephone Number (Res.):
- V. E-mail:

2. Institutional Information

- I. Name:.....
Type of institution: Private/public
- II. Address:.....
- II. Telephone number (off): Fax.....Email.....
- IV. Year of establishment:.....

3. Library Profile:

- I. Name:.....
- II. Library Budget (2006):.....
 - a. Total Budget for automation, if any:.....
 - i. For hardware:.....
 - ii. For software:.....
- III. Number of faculty libraries:.....

4. Library Resources

I. Total Collection:

<u>Category</u>	<u>No. of items</u>
a. Books
b. Journals
c. Dissertation/Thesis
d. CD-ROMs
e. Reports

I. Human Resources

<u>Category</u>	<u>No. of Staff</u>
a. Professional
b. Paraprofessional
c. Non Professional

II. Users

<u>Category</u>	<u>No. of Users</u>
a. Academic Staff
b. Non-Academic staff
c. Undergraduate students
d. Graduate students
e. Any others

III. What library services user expects from automated library?

a. OPAC
b. Book Reservation
c. Automatic mail
d. Fast circulation
e. Any others

5. Details of Library Software Package:

I. Name of Software packages:.....

II. Address of the Organization/Institution who developed the package:
.....

III. Type of software package you choose []proprietary [] Open source []
Freeware

- a. If proprietary software, can you afford it? Yes [] No []
- IV. Year on which automation commenced:.....
- V. Possibility of any customization Yes[] No[]
- VI. Modules available
- | | | |
|---------------------------|--------|-------|
| a. Acquisition | Yes[] | No[] |
| b. Cataloguing | Yes[] | No[] |
| c. OPAC | Yes[] | No[] |
| d. Circulation | Yes[] | No[] |
| e. Serial Control | Yes[] | No[] |
| f. Library Administration | Yes[] | No[] |
| g. Any Other | Yes[] | No[] |

- VII. What are the obstacles in library automation in public and private institution?
- a. Lack of funds
 - b. Lack of Training programme
 - c. Manpower development
 - d. Maintenance
 - e. Absence of computer culture
 - f. Design of automation system

VIII. Data Entry

- a. Maximum Number of database can be created:.....
- b. Number of fields in record:.....
- c. The fields in Library software are:

i. User defined	[]
ii. System defined	[]
iii. Variable length	[]
iv. Fixed length	[]
v. Any other (Please specify).....	
- d. How effective is the system for data entry?

i. Excellent	[]
ii. Good	[]
iii. Poor	[]
iv. Very Poor	[]
- e. Your library software is adopted to:

i. MARC	[]
ii. CCF	[]
iii. UNIMARK	[]
iv. Any other (please specify).....	

- f. The library software package is compatible with:
 - i. Word Processing Package
 - ii. Statistical Package
 - iii. ISO-2709 format
 - iv. Any other (please specify).....

IX. Operating System it supports:

- a. DOS Yes No
- b. LINUX Yes No
- c. NOVEL NetWare Yes No
- d. WINDOWS (95/98) Yes No
- e. WINDOWS NT Yes No
- f. Any other (please specify).....

X. RDBMS/Language in which it is written

- a. Basic/Visual Basic Yes No
- b. DBASE/FoxBASE/FORXPLUS/CLIPPER Yes No
- c. FoxPro/Visual FoxPro Yes No
- d. INGRES Yes No
- e. ORACLE Yes No
- f. C/C++ Yes No
- g. PASCAL Yes No
- h. Any other (please specify).....

XI. System requirements of the software:

- a. PC Pentium III/IV
(If any other system then please specifies):.....
- b. RAM required:.....
- c. Disk space required:.....
- d. Any other (please specify).....

XII. Input/Output devices it supports:

- a. Colour Monitor Yes No
- b. Printer Yes No
- c. Scanner Yes No
- d. Barcode equipment Yes No
- e. Reprographic equipment Yes No
- f. Any other (please specify) Yes No

XIII. Is it able to support:

- a. CD Technology Yes No
- b. Communication Yes No
- c. Image capability Yes No
- d. Modular approach Yes No
- e. Multimedia Yes No

f. Any other (please specify):.....

XIV. Does the library software supports multilingual script system

Yes [] No []

If yes, please mention the language(s).....

XV. Is software able to meet network requirements: Yes [] No []

XVI. Retrospective data conversion

- a. Retrospective data conversion is done by.....
- b. Number of data sent for retrospective conversion.....
- c. How do you assess retrospective data conversion?.....

6. LIBRARY FUNCTIONS

Please mention if application has following facilities:

- I. CAS Yes [] No []
- II. SDI Services Yes [] No []
- III. Inter Library Loan Yes [] No []
- IV. Selection, Ordering and acquisition of Books Yes [] No []
- V. Selection, Ordering and acquisition of Journals Yes [] No []
- VI. Article Indexing/ Abstracting service Yes [] No []
- VII. Graphic Display of collection Yes [] No []
- VIII. Funding and Budget account with expenditure Yes [] No []
- IX. Circulation-issue, return reservation and notice Yes [] No []
- X. Ease of Database creation Yes [] No []
- XI. Repeatable fields Yes [] No []
- XII. Subfields Yes [] No []
- XIII. Ability to handle numeric and statistical data Yes [] No []
- XIV. Creation and maintenance of bibliographic databases Yes [] No []
- XV. Character map can be used in data entering Yes [] No []
- XVI. Ability to download data from internet Yes [] No []
- XVII. Stock verification Yes [] No []
- XVIII. Online Public Access catalogue (OPAC) Yes [] No []
- XIX. Can the Library Guide Map be provided through
Library software Yes [] No []

7. PERFORMANCE

- I. **Printing facility for:** Yes [] No []
 - a. Abstracts/Article Yes [] No []
 - b. Author lists Yes [] No []
 - c. Title lists Yes [] No []
 - d. Subject lists Yes [] No []
 - e. Catalogue cards Yes [] No []
 - f. Membership card Yes [] No []

- g. Various notice Yes [] No []
- h. Any other (please specify):.....

II. Search Strategy

- a. Boolean search Yes [] No []
- b. Keyword search Yes [] No []
- c. String based search Yes [] No []
- d. Word based search Yes [] No []
- e. Truncation/Wild card search Yes [] No []
- f. Dictionary Term search Yes [] No []
- g. Any other (please specify):.....

III. How much time on average it takes to retrieve the data:

- a. Less than 1 minute []
- b. 1 minute []
- c. 2 minutes []
- d. More than 2 minutes []

IV. Database Security

- a. Does the library software package have any mechanism to check that data are not changed by the unauthorized persons? Yes [] No []
- b. Is there any provision to maintain different User Ids and Password? Yes [] No []
- c. Is there any provision to restrict the access to certain records and/or certain fields? Yes [] No []
- d. Backup facility Yes [] No []

V. Needs any kinds of programming Yes [] No []

VI. Help facility Yes [] No []

VII. Ability of importing and exporting of data Yes [] No []

8. DOCUMENTATION OF COMMERCIAL SOFTWARE

I. Is any working manual available with the library software package? Yes [] No []

If yes, in which form it is available

- a. Electronic []
- b. Hard copy []
- c. Both []

II. Does the manual have?

- a. Table of contents
- b. Glossary
- c. Index
- d. Help Option

- i. If help option is available, easy to understand its text
 - Yes
 - No

III. Give your assessment about the manual

- a. Excellent
- b. Very Good
- c. Good
- d. Poor

9. CUSTOMER SUPPORT

- I. Is there any e-mail Discussion Group for the library software?
 - Yes
 - No
- II. Is there any regular Newsletter or User information up-date publication regarding the library software?
 - Yes
 - No
- III. Is there any provision for training? If yes, please mention:
 - a. The duration of the training
 - b. On-Site training
 - c. Elsewhere
- IV. On-site training for library software is available at the time of:
 - a. Installation only
 - b. Arrival of new version
 - c. Need based
- V. In the case of need, how much time it takes to get the service engineer?
 - a. 2-3 hrs
 - b. 1 day
 - c. 3 days
 - d. 1 week or more
- VI. As a customer how far you satisfied for customer support service:
 - a. Extremely satisfied
 - b. Satisfied
 - c. Neither satisfied nor dissatisfied
 - d. Dissatisfied

10. COST

- I. What is the actual cost of the library software package?.....
- II. Terms and conditions in availability of the library software package:
 - a. Purchase
 - b. Lease
 - c. Free Distribution
 - d. Any other (please specify):.....

- III. Is maintenance facility provided for library software package? Yes
No
If yes please mention:
 - a. Annual maintenance charges:.....
 - b. Terms and conditions (in brief):.....
.....
.....

- IV. Mode of supply of updates:
 - a. Free of cost
 - b. Needs to purchase updates a fresh
 - c. With minimum charges

11. EVALUAION:

- I. What kind of problems do you face with the library software?
 - a. Lack of Vendor's readability Yes No
 - b. Non- availability of technical expert/software specialists Yes No
 - c. Difficult to use Yes No
 - d. Lack of administrative support Yes No
 - e. Lack of user friendliness Yes No
 - f. Up gradation of software Yes No
 - g. Customer service Yes No
 - h. Product Purchasing Yes No
 - i. Training Yes No
 - j. If any other problem then please specify:.....
.....

- ii. Do you intend to change the library software presently use? Yes No
 - a. If yes, name the library software you are likely to adopt.....

i. Give reason/s for exchange.....
.....

III. Are you satisfied with the existing software options: Yes [] No []

I. If not, what measures have you adopted to reform the same:.....
.....

II. Any specific suggestion to improve the software package:
.....
.....

III. Would you recommend it to other libraries? Yes [] No []

a. If no, what other library software packages you would like to recommend
(please give minimum three names of other library software packages in
order to their priority.

1.
2.
3.