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THE IMPACT OF ICT IN LIBRARY AUTOMATION IN THE SELECTED LIBRARIES OF DEHRADUN: A CASE STUDY

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Abstract

The advancement of science and technology has made a tremendous improvement in the lifestyle of the society today. It has affected almost all walks of life. Especially, the magnetic words, Information Technology has been chanted in all corners of the global arena and incorporates in organizational, managerial, developmental and marketing sectors. The services rendered with the help of Information Communication Technology (ICT) are faster and more effective. Libraries are not exempted from the impact of the Information Communication Technology. The implementations of ICT in the library and Information Centers have made a tremendous improvement in the management of these centers. This has made the library more users friendly and has increased the efficiency of the library professionals.

This study of this paper is carried out in the four different Libraries of Dehradun, where the ICT is implemented in the management of the library. It's an extensive study carried out to find the potentiality of LMSs in managing the print and non print resources and to find the responses of the users' perception towards the benefits of this technology.
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Keywords: LMS, Automation, Barcode Reader, ICT, Institution Library.

1. Introduction

Dehradun is the capital city of Uttarakhand and the hub of education and learning of the state. The city has prestigious schools and institutions like Doon School, Welham Boys and Girls School, Indian Institute of Petroleum, Forest Research Institute, Survey of India, Indian Military Academy, Archaeological Survey of India etc. Later on the development of Doon University and Uttarakhand Technical University has boosted its compatibility with the other educational institutions of the region. The neighboring city Mussoorie, known for its natural beauty and tourist centre, merely thirty kilometers away from dehradun also has school like Wood Stock and prestigious institution Lal Bahadur Shastri Academy of Public Administration and Institute of Technology Management (DRDO). These schools and institutions have given Dehradun an important place in the field of education and learning. Libraries of these institutions have numerous repositories of information in the form of books, serials, proceedings of meetings/seminars; writings, print and no print material information in electronic format for future reference and research.

Information has been always resources for creating material welfare in the human society. The computer and information technology has helped the library professionals to preserve these print and non print materials in a systematic and logical order. Initially, the progress towards the development of the computer and Information Communication Technology was slow.

The half of the twentieth century with the advent of Information Technology, which was the converging technology of computers, communication, media and a host of other microelectronic technologies.

Information Technology is a term that has been heard since 1970s. This term refers to the technologies and applications developed through data processing and storage powers of computers. Computers were first produced to manipulate and store data. There have been remarkable changes in the life styles of people with all sorts of comforts and facilities. The advent of web technologies has provided great opportunities to interpersonal interactions for different purposes. Before we proceed to the further study of the subject we need to elaborate the Information, Communication, and Technology in a logical manner.

Information

Information is the main source of development of the society. No society can progress without the proper information. Hence the libraries, being the information centers, preserve and give the information to the new generations for research and development. The following definition of information can be derived from various sources. According to *Oxford English Dictionary* the term information can be defined as: "The action of informing; formation or molding of the mind or character training, instruction, teaching; communication of instructive knowledge." It also define the term as "the action of informing, communication of the knowledge or 'news' of some fact or occurrence; the action of telling or fact of being told of something." In other words "Knowledge communicated concerning some particular fact, subject, or event; that of which one is apprised or told; intelligence news." Therefore "Information" is the communicating of news, knowledge, or facts. It consists of data endowed with relevance and purpose. Its main function is to present facts so that man's vision is broadened, thereby enabling him to fight against the problems posed by ignorance and superstition. It is therefore considered to be a basic need of man, ranking after air, water, food, clothing, and shelter. Modern means of transport, computers, and telecommunications have reduced the world to a global village, wherein one need only plug in, in order to be connected to the whole world. According to Blumenthal "Information is data recorded, organized, related or interpreted within context to convey meaning". Therefore recently the information has been recognized as a valuable commodity, and the time may not be far off when information will function as a currency to be exchanged for goods and services all — over the world. It is therefore imperative that everybody realize the importance of information and have easy access to it.

Communication

The word communication has originated from Latin root *communis* meaning common. The *Oxford English Dictionary* defines the term Communication as "The action of communicating or imparting." It further explains the term by giving the following definitions: "The imparting, conveying, or exchange of ideas, knowledge, information etc. (whether by speech, writing, or signs)." Thus communication can mean, "That which communicated, or in which facts are communicated; a piece of information; a written paper containing observations." According to *Webster Encyclopedic Unabridged Dictionary of the English Dictionary* the term communication is "the act or process of communicating, fact of being communicated." It further explains "a document or message imparting news, views, information etc." Therefore communication is a process of imparting information to the need of the common masses for development of self and society.

Technology

The term Technology is derived from the Greek root Tecnologia which means treatment and Tech meaning art or craft. The term can be better understood as "A discourse or treatise on an art or arts; the scientific study of the practical or industrial arts." *Webster Encyclopedic Unabridged Dictionary of the English Dictionary* defines technology as "The branch of knowledge that deals with the creation and use of technical means and their interrelation with life, or society, and the environment, drawing upon such

subjects as industrial arts, engineering, applied science, and pure science." The modern technology is being used for the up gradation of human society. The technology has totally changed the way of life and life style. Today we cannot live without the help of technological assistance in our lives.

2. Scope and Objectives of Study
The scope of this study is limited to the implementation of Information Communication Technology in the selected libraries of Dehradun city Uttarakhand. The study is intended to be carried over the potential implementation of the ICT in library housekeeping operation and its impact upon its users. This study is also intended to evaluate the users' response towards the effective implementation of Information Communication Technology in the libraries. the following libraries will be consulted:
1. Institute of Management Studies Library, Mussoorie Road, Dehradun
2. Doon Library and Research Centre, Parade Ground, Dehradun
3. Songtsen Library: Centre for Tibetan and Himalayan Studies, Sahastradhara Road, Dehradun
4. Central Library, Forest Research Institute, Chakrata Road, Dehradun

3. Limitations
There are two limits for conducting this study i.e. Time and Area limit. Area of study has been restricted to Dehradun city. We will not study all the libraries but only the selected libraries of the dehradun.

4. Methodology
The study to be conducted will be a survey type thus the best tool for a survey Research is mainly Questionnaire. Therefore, data will be collected through a questionnaire. This is an empirical study on the prominent selected libraries of Dehradun. This will also study the development of the libraries at the foothill of Himalayas, computer and Information Communication Technology and information services. It will also consider the use of library and information services to people by taking up sample. A group of population will be studied regarding their use of library and information services by taking a sample. Users' response survey will be conducted.

5. Data Analysis
Data collection for the study of the effective implementation of Information Communication Technology in the selected libraries of Dehradun was carried out personally by the researcher. It was done in a span of two weeks duration. Along with the questionnaire the researcher was personally engaged in conversation with the librarians and the users to find out the usefulness of the ICT in the library automation. This chapter collects the data and analyses them.

Institute of Management Studies

The Institute of Management Studies is located in Mussoorie Road, Dehradun. The natural beauty of hills and valleys around it, make it more special. The campus is away from the crowd of the city, which makes it more conducive for learning. It is the premier institute of Dehradun. The institute was established in 1996 and is approved by AICTE and affiliated to the Uttarakhand Technical University. It has over 2,200 students' studying in various streams and 220 Faculty Members and Staff's. The library of IMS, Dehradun is the central academic center for learning, with academic excellence in the field of education. Its membership is comprised of teachers, research scholars, students and staffs. IMS Dehradun offers a variety of exclusive facilities that have established it as a center of excellence for education in Management, Computer Applicatiom, Mass Communication and Law. LAN, WAN and Wi-Fi network to provide various IT services to its users in the campus.

Information Related to the Library Material

The library has over 49,000 books and over 22,000 reference materials and subscribed the 140 print journals, through the local vendors as well as directly from the publishers. It also has over 150 bound periodicals in its collection. It has 325 indexed E-journals in CD-ROM and 40 abstracts. It has subscribed

to 270 online database journals and100 abstracts. It also has the collection of fifty videos and eighty audios.

The completely e-enabled library
The completely E-enabled Library has an automated interface that allows the students and researchers to locate and access information and reference material via a computerized search facility LIBSYS OPAC.
IMS Library is well stocked with a wide range of Books, Journals, Newspapers, Statistics, Project work assignments and Periodicals. The Library is operational from 9:00 AM to 9:00 PM.
There are over 49,000 Volumes & 10,500 Titles in Management, Computer Application, Mass Communication and Law. The library has subscribed to over 270 leading online Database journals on Management, Mass Communication, Computer Application and Law.
IMS Library is fully computerized with Library Management software LIBSYS 6.4. Books and materials are issued only on swiping the smart cards which are issued to every student and Staff's members. These smart cards make use of the latest bar-code technology. The Smart cards also help the librarian to order more copies of the material in greater demand. The library is fully utilizing the potentiality of the Information Communication Technology to give better services to its users.

Information Related to Library Automation and Networking
The library began computerization from 2000 onwards. The library has twenty Dual Core hard processor computers, one server, three scanners, three printers, three barcode reader and three photocopy machines and CD Case software. The library is using LibSys, Library Management Software to manage the house keeping operation. LibSys is fully integrated multi-user LMS based on client-server model and supports open system architecture, web-based access. This software package is designed and developed by LibSys Corporation, Gourgaon. LibSys has seven basic modules – Acquisition; Cataloguing; Circulation; Serials Control; OPAC; Web-OPAC and Article indexing. The library began to use Library Management Software from the year 2000 onwards.

Management Information System
The following services are generated by this LMS:
- Reports of Order Status
- Status Report on Library Budget
- Status of Library Collection and
- Circulation statistics

Current Awareness Services (CAS), Selective Dissemination of Information (SDI), bibliographical records, Union Catalogue Access, and Article delivery services have been computerized. The library has CD-ROM search also. The CD-ROM search services began in 2000. It has twenty CD-ROM workstation with twenty CD-ROM drives. The library also provides online search service to the users. There are fifteen systems exclusively used by the users. OPAC, Internet, Online journal search, and CD-ROM search can be browsed by the users. The library and the campus have LAN, WAN, and Wi-Fi networking. The library does not have any library consortia.

Problems Related to Library Automation
No problems have been encountered by the library professional in the library automation. They have adequate financial assistance. They do not face inadequate management support. They have active support from experiential personnel. There are no lacks of official/policy guidelines. The professional are well versed with the IT.

Doon Library and Research Centre
The Doon Library and Research Centre came into existence formally on March 16, 2006 with its registration under the Societies Registration Act. It became functional on December 8, 2006 when its

present premises in the Parade Ground were inaugurated by the Chief Minister Uttarakhand, Hon'ble Shri Narayan Datt Tiwari. It is located in the heart of the city.

The Doon Library and Research Centre is an autonomous institution registered as a Society under the Societies Registration Act. It is managed by a Governing Body with the Chief Secretary, Uttarakhand Government as the Chairman. The other members of the Governing body include Secretaries of the Departments of Finance, Planning, School Education, Culture and Higher Education of the Uttarakhand Government, eminent educationists and personalities nominated by the Governing Body.

The establishment of the institution can be traced to the realization that Dehradun, the premier city of the new state of Uttarakhand, does not have a good library catering to scholars and researchers working in the fields of social sciences and humanities and on Himalayas, including Uttarakhand. Dehradun also lacks a good public library for the general readers. The library thus seeks to fill these gaps. It is, therefore, intended to be developed as:

- An important resource for scholars and researchers in social science and humanities in the state (and even the neighboring states of Himachal Pradesh and Uttar Pradesh), thereby giving a fillip to research in these fields;
- A one-stop repository of material on society, economy, history, culture, ethnography, literature, folklore and polity in the Himalayan areas of India, especially Uttarakhand; and
- A place serving the reading needs of an enlightened and book-loving general public.

The library is a research centre devoted to studies on the Himalayan areas of the country in general, and Uttarakhand in particular, from the perspective of social sciences and humanities is also being developed. In fact the idea is to build a research centre around the library so that it becomes a centre of intellectual and academic activity in the region. The library has over 11,000 books on its shelves. It is also subscribing the 50 journals in social sciences and humanities. The library is operational Monday to Saturday Reading Room (for newspaper & magazines): 8 AM to 8 PM on all days Library & Reading Room (for books and journals): 10 AM to 6 PM Mon-Sat excluding second Saturday and holidays.

It is a research centre in the field of social sciences and humanitarian and Himalayan studies. Its total membership is eight hundred thirty one only. Out of which the research scholars are one hundred fifty. The total library monographic collection is 13,000 (thirteen thousand). It also has two hundred fifty reference books as well in its collection. It has currently subscribed to fifty print journals, twenty one magazine, and twelve news papers. The magazines and journals are both directly subscribed through the publisher and the local vendors.

The library began its automation process from the year 2007. It has five PIV personal computers, one server, three printer, one barcode reader and one photocopy machine. The library is using SOUL (Software for University Libraries) library management software since 2008. The story of SOUL started with the development of ILMS (Integrated Library Management Software) by INFLIBNET in collaboration with DESIDOC. Two versions of ILMS (DOS and UNIX) were developed for university libraries in India. But with the introduction of GUI-based system and other revolutionary changes in the field of computer software, INFLIBNET decided to develop a state-of-the art, user friendly, Window-based system that will contain all the features/facilities available with other LMSs in the market. As a result INFLIBNET came out with a LMS called SOUL. The SOUL has six modules – Acquisition; Cataloguing; Circulation; Serial Control; OPAC and Administration. This library is also providing the online facility from 2008 onwards. Two computers are assigned for On Line Public Access Catalogue (OPAC) and internet browsing. The library is networked as LAN. This library has library consortia with INFLIBNET.

Songtsen Library: Centre for Tibetan and Himalayan Studies

Songtsen Library: Center for Tibetan and Himalayan Studies had been a long held vision of His Holiness the Drikung Kyabgon Chetsang Rinpoche, the head of Drikung Kagyu order of Tibetan Buddhism and was inaugurated on March 6, 2003 by His Holiness the XIV Dalai Lama. It is officially recognized as a Research and Resource Centre by the Hemwati Nandan Bahuguna Garhwal University (a Central University), Srinagar, Uttarakhand and is a branch of the Drikung Kagyu Institute, yet functions independently. Drikung Kagyu Institute is a non-profit organization founded on 1985. The Library is named after the 33rd King of Tibet, Songtsen Gampo (AD 617-650), who is credited with bringing Buddhism to Tibet. The architecture was inspired by that of Yumu Lhakhar, popularly known as Tibet's first castle, and the artwork has been carefully designed to reflect a more expanded view of Central Asian art from the sixth century onwards, formed by artists travelling the Silk Road from France to China, hence incorporating influences from Persia, China and Tibet.

It functions as a non-political institution geared to the collection and preservation of books, as well as research and publication on various subjects related to Tibet and the Himalayas. The construction of the institution began in July 1999 and was completed in July 2001.

The library has a comprehensive collection of books and rare Tibetan and Himalayan manuscripts. Of particular interest is the collection of publications on the Dun Huang documents, one of the earliest sources on numerous subjects on Central Asian culture including history, literature, religion, law, astrology and medicine. The original manuscripts date from around the 6th to 12th century AD and were discovered in the early part of the 20th century at various caves on and near the famed Silk Road of Central Asia. Other important collections are the multi-lingual Buddhist Kagyur and Tengyur, the Bon Kagyur , many commentaries of great masters of the four major sects of Tibetan Buddhism, and the personal collection and journals of the well-known western scholar and pioneer of Buddhism, Lama Anagarika Govinda.

Its membership is comprised of teachers, students, research scholars and staffs. The total membership is about two thousand. It has over twenty six thousand collection on Himalayan and Tibetan Buddhist studies. It also has five hundred unique reference collections. Currently it has subscribed to five print journal and two journal databases. Four news papers are also subscribed by the library.

It has recently installed over 6,000 digitized format texts from the Tibetan Buddhist Resource Center of New York. Similarly a master collection of archival quality CD-ROMs from the Orient Foundation with over 13,000 hours of video and oral commentary of the great Buddhist masters of the past 15 years is available. Both these recent developments and ongoing expansion of its on-line database further the mission to make these important works more accessible to the public.

Information Related to the Library Automation and Networking

The library started its computerization from 2003 onwards. The library has eleven PIV computers and one server. Beside this it also has one scanner, one printer, and one barcode reader and photocopy machine. Slim21 Library Management Software is used for housekeeping operation.

Central Library, Forest Research Institute Library, Chakrata Road, Dehradun

Established as Imperial Forest Research Institute in 1906, Forest Research Institute (FRI) Dehradun, is a premier institution under the Indian Council of Forestry Research and Education (ICFRE). This is one of the oldest institutions and acclaimed the world over. The Institute's history is virtually synonymous with the evolution and development of scientific forestry, not only in India, but over the entire Indian sub-continent. Set in a lush green estate spread over 450 hectares, with the outer Himalaya forming its back drop, the Institute's main building is an impressive edifice, marrying Greco-Roman and Colonial styles of

architecture, with a plinth area of 2.5 equipped laboratories, library, herbarium, arboreta, printing press and experimental field areas for conducting forestry research, quite in keeping with the best of its kind anywhere in the world. The library membership includes the faculty, students and research scholars.

National Level University Library with a collection of 1.65 lakh books, 36,888 bounded periodicals and subscribes 118 Indian and 150 foreign periodicals with reprographic facility.

Information Related to Library Materials
Being one of the oldest institutes in Dehradun, it has the largest number collection in the field of forest studies. Upon creation of Indian Council of Forestry Research and Education in 1986 and subsequently its acquiring of autonomy in 1991, the then Central Library of Forest Research Institute and Colleges was rightly rechristened National Forest Library and Information Centre (NFLIC) It has over 1.65 lakh books, including general and reference books. It also has more than 7,000 ledger files containing research articles, etc. on different forest species and subjects, and almost all Indian and foreign journals on forestry and allied sciences. The library has currently subscribed two hundred thirty five (235) print journals. It has 34 e-journals and has subscribed two databases. It has 36,888 bound periodicals in its collection. The library has also subscribed to 16 newspapers.

Information Related to Library Automation and Networking
The library is using in house built library management software (LMS) since 1994. This has LAN based network, connected to sixteen computers in different division and sections. This has its own website. This in house built LMS is also loaded in www.frienvis.nic.in. It has a searchable database. This LMS provide cataloguing, automated printing of catalogue cards and also maintains the membership record. There are sixteen PIV personal computers in the library. It has two server, one scanner, six printers and two photocopy machines. The library also provides the CD-ROM search services. The numbers of CD-ROM workstations are two and it has totaled sixteen CD-ROM drives. The library provides online search service to its users. This service has started from 2010 onwards. Two computers are exclusively used by the users to locate the books in the library. The online search provides the following services:
- OPAC
- Online Journal Search
- Internet and
- CD-ROM Search

Evolution of Library Automation Software
Library Automation Software is a continuous process. The development of LMSs can critically be analyzed on four stages. The LMSs developed in all parts of the world from mid 1970s to till date may be fitted into one of these four periods:

The first generation LMSs were module based systems with no or very little integration between modules. Circulation module and cataloguing module were the priority for these systems and were developed to run on specific hardware platform and proprietary operating systems.
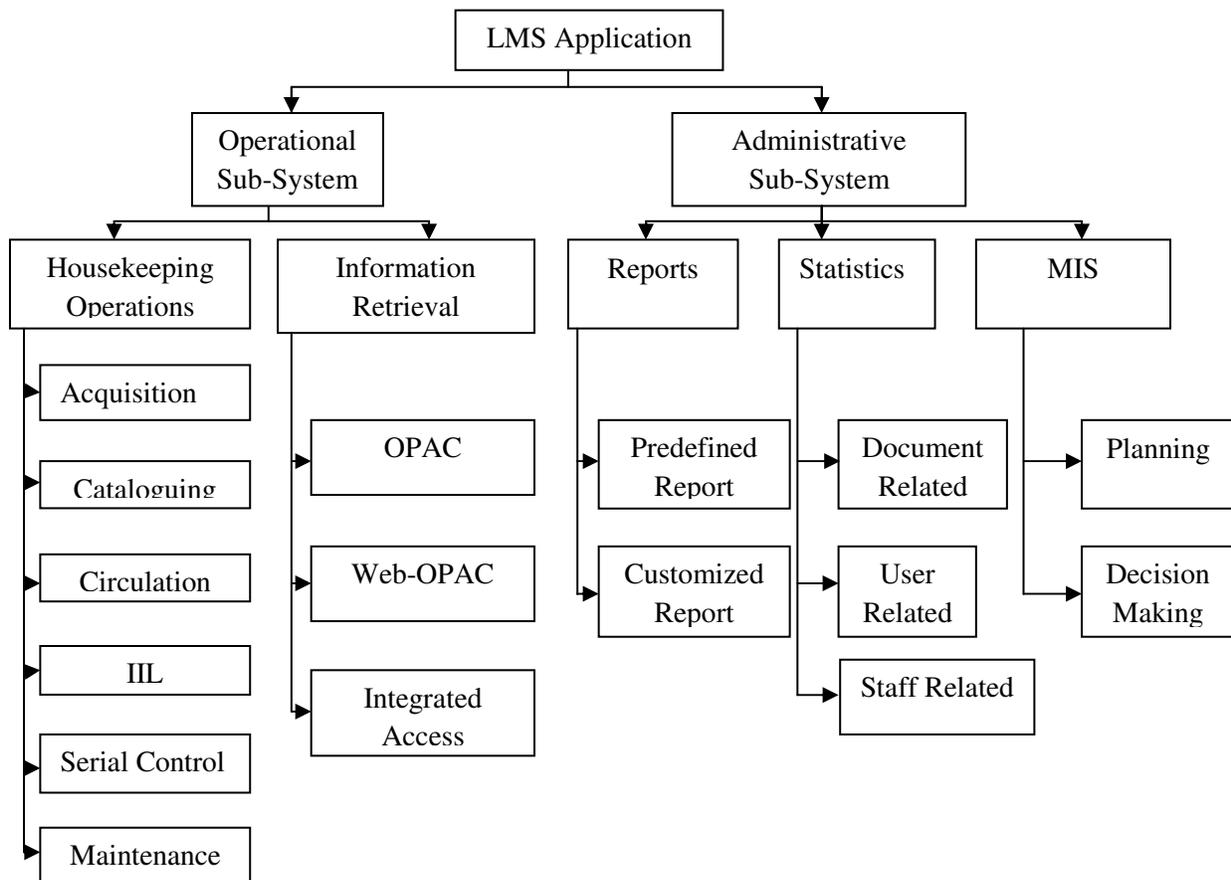
The second generation LMSs became portable between various platforms with the introduction of UNIX and DOS based systems. The LMSs of this generation offered links between systems for specific functions and were command driven or menu driven systems.

The third generations LMSs were fully integrated systems based upon relational database structures. They were based on the range of standards, which was a significant step towards open system interconnection. Color and GUI features, such as windows, icons, menus and direct manipulation have become standard and norms in this generation. They operate in client server setup.

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The fourth generations LMSs are based on the web architecture and facilitate access to other servers over the internet. These systems allow accessing multiple information sources from single window user interface and support digital archiving.

Functions of Library Automation Software

The LMSs are used as intelligent tools for performing housekeeping operations, information retrieval and MIS (Management Information System) activities. The total function of the modern LMSs can be explained as the following:

This extended illustration of the library housekeeping operation provides us the detail function of a library. In the manually operated library all these operations are not easy to regulate. There may arise many errors and problems. The LMSs give us straight forward solution to this problem. The above diagram suggests that by the implementation of ICT in the Library automation the work becomes more easy and practical. The most important fact is that the ICT avoids the data redundancy. And if any change is made in one file, it changes in all the relative files simultaneously. The librarian doesn't have to change each file. This operation is not possible in manually operated libraries. All above described operation can be performed by the ICT.

Distribution of Users in the five libraries under Study

Name of the Library	Number of Users
Institute of Management Studies	2200
Doon Library and Research Centre	839
Songtsen Library	2000
Central Library: Forest Research Institute	1500

From the above table, the distribution of users in the four libraries of Dehradun under study is evident that the Institute of Management Studies has the maximum users, followed by the Songtsen Library. Central Library: Forest Research Institute and Doon Library and Research Centre fall in order respectively.

Distribution of Staff(s) in the Library

Name of the Library	Professional Staff(s)	Non Professional Staff(s)
Institute of Management Studies	08	02
Doon Library and Research Centre	05	10
Songtsen Library	04	16
Central Library: Forest Research Institute	03	13

Ample amount of library staffs are found in the libraries under study. The Institute of Management Studies is having the maximum number of library professionals. The second largest numbers of library professionals are appointed in the Doon Library and Research Centre with five professional and ten non professional/supporting staffs. Songtsen Library too is having a good number of professional and other non professional staffs and the Central Library: Forest Research Institute is also having good number of staff as per their requirement.

Through the questionnaire it also has been unearthed that in all these libraries the staffs are given enough opportunity to enhance their professional skills by allowing them to attend the various training programs or seminars. Some of them have attained higher degrees in the library and information science. An equal opportunity is provided to both male and female staff to get trained in the IT environment so that they may be easily able to handle the problem arising from the IT. Human Resource Development has been seen as the major power booster in the library profession.

Distribution of Documents

| Name of the Library | Books | Non-Books | | | | E-resources |
		No. of Journals	No. of Bound Journals	Newspapers	Thesis/Dissertations	
Institute of Management Studies	49,000	140	150	42	-	270
Doon Library and Research Centre	13,750+	50	-	21	-	-
Songtsen Library	26,500	9	5	4	-	-
Central	1.65 lac	235	36,888	16	-	It has

					subscribed two journal databases
Library: Forest Research Institute					

The comparative study of the above table evidently describes that the Central Library: Forest Research Institute has the maximum collection of books (1.65 Lac). This is followed by the Institute of Management Studies having the collection of forty nine thousand books. The list follows as songtsen Library (26,500 books), and then the Doon Library and Research Centre (13,750+ books).

Institute of Management Studies has subscribed to 140 journals, Doon Library and Research Centre 50, Central Library: Forest Research Institute 235, and the least number of journals are subscribed by the Songtsen Library 9. The Central Library: Forest Research Institute excels all other libraries in the bound journals. It has 36,888 bound journals to its credit, which is followed by the Institute of Management Studies (150), and then the Songtsen Library (5). The Doon Library and Research Centre have no bound periodicals to its credit so far. The maximum e-books are collected by the Institute of Management Studies has subscribed to 270 e-journals and the Central Library: Forest research Institute has subscribed two journal online databases.

Distribution of Services Rendered by these Libraries

Name of the Library	Services									
	Circulation	Photocopy	Audio/Visual	Instruction for Using Library	Reading Room	Library Bulletin	CAS	SDI	Internet	OPAC
Institute of Management Studies	yes	yes	yes	yes	yes	no	yes	yes	yes	yes
Doon Library and Research Centre	yes	yes	no	yes	yes	yes	yes	no	yes	yes
Songtsen Library	yes	yes	yes	yes	yes	no	yes	no	yes	yes
Central Library: Forest Research Institute	yes	yes	no	yes	yes	yes	yes	yes	yes	yes

When we carefully analyze the above table, it is evident that the services of circulation, photocopy, instruction of using library, reading room, OPAC, and CAS is offered by all the four libraries under study. Two libraries are offering the services of using the audio/video materials, whereas two have no record of any audio/video materials. Only two libraries have their library bulletin, whereas the other two do not offer this service. Two libraries are offering the SDI service and all four libraries are providing the internet services.

Library Automation and Computerized Services

Name of the Library	Automated	LMS	House Keeping Operations			
			Acquisition	Circulation	Serial Control	OPAC
Institute of Management Studies	Yes	LibSys	Yes	Yes	Yes	Yes
Doon Library and Research Centre	Yes	SOUL	Yes	Yes	No	Yes
Songtsen Library	Yes	Slim++	Yes	Yes	Yes	Yes
Central Library: Forest Research Institute	Yes	In House Built	Yes	Yes	No	Yes

After analyzing the above table we find that all the libraries under study are automated. But all these libraries are not using the same LMS. The Circulation, Acquisition, and OPAC services are offered by all the libraries. The Institute of Management Studies and Songtsen Library provide the Serial Control services. The LMS have brought a sea change in the house keeping operation of the library. Now a document in the library can be easily located. The library professionals have found implementation of Information Communication Technology in library services easy and satisfying. This is not only saving the time of the users but has increased efficiency of the library professionals.

The barcode technology has been found extremely useful in circulating the books. Borrowers' identification number is issued to each user in the barcode format. This barcode is either issued to the user in the identity card or in smart card format. On scanning the users' barcode through barcode reader, it tells all the profile of the user. This lessens the conversation with the user by the library staff to reduce unnecessary noise in the library premises, thus helping in maintaining silence. This has been very much appreciated by the users.

Though the users were not very much clear about different housekeeping operation carried out through the implementation of Library Management Software, but they highlighted the various kinds of jobs done through computer. Acquisition, cataloguing, Periodical Control, Journal Indexing, Circulation Control and Stock Verification is being carried out by these modern library management software.

Users' response towards the implementation of Information Communication Technology in the library:
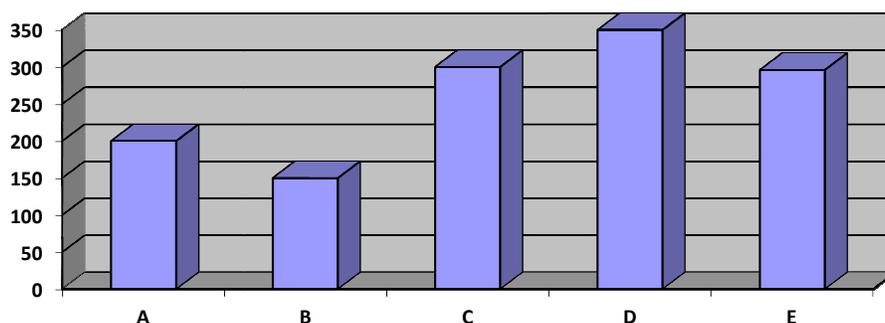

Figure 1

A=Aware of the Implementation of ICT in the Library
B=Aware of the Various House Keeping Operation in the Library
C=OPAC is found Useful
D=Implementation of the ICT in the Library Automation is found Useful
E=ICT has made the Library user friendly

This figure suggests that out of five hundred library users two hundred are aware of the implementation of ICT in the library. Only one hundred and fifty users are aware of the various housekeeping operation carried by the libraries by the library management software. Some of them are unaware of the housekeeping operation of the library also. It seems that they are least informed about it. May be they don't it so important. For them getting the required sources from the library is priority. In locating sources in the library, the On Line Public Access Catalogue (OPAC) has been found very useful by the users. Three hundred users have found so useful and comfortable to this module of the Library Management Software. The OPAC is entirely a different program of locating sources in the library. Earlier in the traditional libraries, this job was carried out through manually created card, preserved in the catalogue box according to subject wise, class wise, author wise, and title wise etc. If the library collection is very large, then the number of catalogue cards too was very large. In order to locate a source through these catalogue cards, it consumed a lot of time of the users. Sometimes if the users were able to locate the source, then it would not tell the status of the source, i.e. whether the source looked for is in the stack, course reserve, or in circulation. This computerized cataloguing has sorted out this problem. This OPAC can search the source by its author, title, subject, publisher, ISBN, key words, any words, date of publication etc. After locating the source, it is also able to display the status of the source. All these works are carried out within no time. Thus it saves the time of the user. Hence the users have found this service very-very profitable in locating the material in any big libraries. Three hundred fifty users have responded that the LMS has been found useful in the library. They have expressed their satisfaction. Three hundred users have responded that the ICT has made the library friendly.

Conclusion

Information Communication Technology is most important tool to disseminate information to users in efficient manner and in faster speed. By using the modern tools such as computerization and use of software and with proper networking we are able to provide library oriented information. Information Technology has provided technological solutions, like developments in information, communication. Computer technologies have made available powerful tools to a large sector of population. The provision like video conferencing, satellite applications, internet etc., started bringing changes in life style of every individual. Education has become multidimensional. Application of software in teaching and learning has made things to learn much easier and clear. Government Administration has utilized the IT as tool to solve their problems and collect information much faster and imposes taxes system efficiently and also to store information to use it in many different manners.

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