

**IMPACT OF INFORMATION TECHNOLOGY ON
CHANGING ETHOS OF RESOURCE SHARING
AND NETWORKING IN THE LIBRARIES OF
NATIONAL INSTITUTES OF TECHNOLOGY
IN INDIA: A STUDY**

**Abstract
of
Thesis**

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Abstract

INTRODUCTION

Information communication technology has transformed the institutions or organizations. Libraries are also utilizing modern technology for improvement of existing library services and creation of new services which shows the impact on the shape and size of the existing libraries and proving the existence in the organizations. Information technology has also changed the trends of libraries and brought extraordinary transformation in academic library specially in field of resource sharing and networking. Every day, lots of information get published throughout the world. Therefore, it is impossible for any modern library to procure all the resources to meet the various needs of the users. Several factors such as rapid increase of publications, reduced financial resources, increase of prices and ever increasing expectations of users have made the libraries to look for alternative means of resources. One of the important means is sharing of resources among themselves.

The National Institutes of Technology (NITs) are autonomous institutes of higher education. These are governed by the National Institutes of Technology Act, 2007 which has been declared as institutions of national importance and lays down their powers, duties and framework for governance. The National Institutes of Technology Act, 2007 lists thirty-one institutes. Each NIT is autonomous, linked to the others through a common council named Council of National Institutes of Technology, Science Education and Research (NITSER), which oversees their administration and all NITs are funded by the government of India. The MHRD minister is the ex officio chairperson of the NIT Council.

The Central Libraries of NITs are one of the central support services. The duty of central libraries of NITs is to provide information services and access to bibliographic and full text digital and printed resources to support the scholarly and informational needs of the students, faculty and staff. The library offers books, book bank of textbooks for those users who cannot afford the expenses of books. The library sustains inter-library loan relations with member of institutions and libraries.

Resource sharing is the collaborative use of resources of participating libraries based on the agreement of cooperation to share the resources of each other's materials. This entails not only to share the document resources but also facilitates services, equipment and even the human resources among the participating libraries. Libraries have started using the computers in large number and have automated their functions and services. After the introduction of the internet in Libraries, the concept of on-line resources was introduced, and the libraries started subscribing e-journals regularly. The traditional sources of information, i.e. books, journals, magazines are supplemented by electronic forms of documents e-books, e-journals, e-newspaper etc. The electronic libraries get connected to one or the other networks. A computer network allows the user of one computer to use the resources of another computer which may be space, database, programs or printer. The traditional libraries were facing barriers for an interlibrary loan such as indifferences of lending library, conservative attitude, distance, language, cost time etc. The recent developments in Information science, Computer and Telecommunication technologies have changed these perceptions on account of multidimensional growth of published documents. The modern libraries with advanced technology are forming library consortium for sharing electronic resources.

OBJECTIVES OF THE STUDY

The main objectives of the study are:

- I. To assess the feasibility of developing a library network of NIT Libraries in India;
- II. To identify the problems and barriers faced in Resource Sharing by the NIT Libraries in India;
- III. To examine the information technology tools adopted by NIT libraries for enhancement of resource sharing;
- IV. To assess the user's perception about the present status of resource sharing and networking;
- V. To study the resource sharing programs and techniques adopted by the libraries of National Institute of Technology in India.

HYPOTHESES

The hypothesis is an essential rational instruction of research. It is usually considered as a tentative declaration or statement about the relation between two or more variables, which can be observed empirically. The following hypotheses were intended to be tested in the study:

- I. Lack of skilled library personnel is one of the significant barrier faced by NIT libraries in India.
- II. Application of IT tools is effectively incorporated in all NIT libraries for enhancement of resource sharing.

- III. The users of NIT Libraries have yet to achieve satisfaction with technical facilities provided by the library.
- IV. There are no policies as well as appropriate rules for resource sharing in the NIT Libraries of India.

SCOPE OF THE STUDY

The scope of this study is limited to explore the impact of information technology, especially in resource sharing among the NIT libraries in India. Total 31 national institutes of technology are located in India. For the present work, the researcher has categorised six zones that are east, west, north, south, northeast and central zone of India (Maps of India). From these zones, NITs are classified, and the following list has indicated the same. There are varying numbers of institutes in the selected zone. Due to this unequal proportion of NITs across the zones, two institutes present in a particular zone had been selected for the study.

List of selected NIT libraries

S. No.	Zone	Name of the Library	Name of the Institute
1	East Zone	Central Library	National Institute of Technology, Patna
		Biju Patnaik Central Library	National Institute of Technology, Rourkela
2	West Zone	Central Library	S V National Institute of Technology, Surat
		Central Library	National Institute of Technology, Goa
3	North Zone	Library	National Institute of Technology, Kurukshetra
		Central Library	National Institute of Technology, Delhi

4	South Zone	Central Library	National Institute of Technology, Truchirappalli
		Central Library	National Institute of Technology, Pondicherry
5	Central Zone	Central Library	Maulana Azad National Institute of Technology, Bhopal
		Central Library	National Institute of Technology, Raipur
6	North East Zone	Central Library	National Institute of Technology, Silchar
		Central Library	National Institute of Technology, Meghalaya

NEED OF THE STUDY

There have been many efforts cooperatively managed by Indian libraries for resource sharing in the last three decades, but it is very hard to state that particularly that one is a successful model which could set a benchmark. Although, E Shodhsindhu is working very well. This national collaborative service is not in a state to provide a model/ framework from which collaborative service can be customised. After going through the literature survey, it seems that initiatives in this area are not enough to satisfy the demands of the engineering and technical communities. The need of the day is a broad resource sharing and networking and formation of a single platform for sharing the resources among all NITs in India.

METHODOLOGY ADOPTED

The main objective of this study is to assess in quantitative and qualitative both concerning the impact of information technology on changing scenario of resource sharing among the libraries. In the present study, data has collected by using a

structured questionnaire, observation as well as interview method. Also, the indirect method of data collection, which is the usage of websites of all NIT and its library websites has been used by the researcher. To analyse the status of networking and resource sharing among the libraries of the National Institute of Technology in India, the present study has been performed. The population of the study is librarians and the users of NIT Libraries in India. The sample is homogeneous as they belong to the same discipline. Stratified sampling has been used for selecting the institute among the population of the study. After collecting the data, suitable tables have been formulated for each aspect with the help of Statistical analytical tools. The analysis involved various steps like categorising data, coding data and calculation that is tabulated and analysed. Summary of questions has been carried out in the same order as given in the questionnaire. Separate tables, along with graphs and textual presentations, have been prepared for different aspects asked in a survey and discussion have been interpreted and reported in the final report of the study. References and Bibliographies had been prepared according to the American Psychological Association guide available at the Website of www.apastyle.org.

MAJOR FINDINGS

Services offered by the libraries

- It was inferred from the analysis that 12 (100%) central libraries provide lending services to their, followed by reprographic service (83.33) and web OPAC service.
- it was found that only 16% of libraries having mobile-based applications in their libraries. While 84% of libraries are not using any mobile-based form for their library service.

- NITRKL provides access to the exclusive collection based on Odia language to their students as well as they were creating an institutional repository for its users where they can get access to the information.
- Mobile-based services are the most popular technique to provide speedy service to its users. Only NIT Delhi was using the mobile app for providing information services to their users by using Knimbus mobile-based service.

Library Collection

Printed Materials

NIT Kurukshetra has the maximum amount of printed books collection in their library. They had approximately 169439 books in their central library, whereas NIT Puducherry has the least number (4123) of printed books in their central library. This finding of the study shows that the year of establishment played a significant role in the number of the printed collection of the library. NIT Delhi, NIT Goa, NIT Meghalaya, NIT Puducherry they are newly established institutes, and at present, they are working on their collection development and managing the library.

NIT Tiruchirappalli is having the maximum (164) number of print periodicals available in their library, whereas NIT Raipur has the minimum (50) number of print periodical available in the library. While NITPDY, NITM, NITD, NITG has not printed periodical available in the library. MANIT and NITP do not respond to the question.

With this sequence, the availability of printed bound volume in libraries only in SVNIT, NITRKL and NITS had printed bound volumes available in their libraries. Among these NITs, NIT Rourkela has the maximum number of print volume available in its library. Whereas the remaining nine libraries said they do not have printed bond volumes in their library.

Electronic Collection

NIT Patna has the highest number (34588) of EBooks available for their users, followed by MANIT (26025), NITR (17000) and NIT Rourkela (15000). Whereas NITD, NIT Puducherry and NITS did not respond to have a collection separately in eBooks. They replied for the query that they are a member of EShodhsindu.

It was found from the study that SVNIT has the maximum number (15774) of books in CD format is available in the library, whereas, NIT Goa is having least number (305) of CD ROM books available in the libraries. While NITR, NITM, NITD and NITPDY did not have CD ROM collection available in the library.

The study showed that SVNIT was having the highest number (8488) of the collection in electronic periodical available in their library followed by NIT Tiruchirappalli (8000), NITR (6922) and NITD (6500). In contrast, six NITs (NITD, NITPDY, NITM and NITR) libraries did not responded to the query.

ICT Equipment available in the libraries

- It was found from the study that NIT Thiruchirappalli has the highest number (110) of machines available in the library for the library staff as well as for users also.
- Study revealed that maximum libraries had one server machine in the library for the library routine work and NIT Kurukshetra provides the highest number of server machines to the library (3) followed by NIT Silchar (2).
- In case of availability of photocopy machine NITTT and SVNIT are having three photocopy machine available in the library. Remaining 9 NIT libraries were having a single photocopy machine available in the library whereas NITPDY doesn't have any photocopy machine available in the library.

- NIT Kurukhsetra has the maximum number of overhead scanner available and being used for the document scanning followed by NIT Thiruchirapalli.
- NITKKR has the maximum number (6) of barcode scanner available in the library. Whereas, NITT and NITR have a single unit of the scanner available in the library.
- it was viewed from the data that NITM has the maximum number of CD/DVD writers available in the library.
- It was revealed from the study that six NIT library (NITG, NITKKR, NITM, NITRKL, NITS and NITT,) has the LCD projector.

6.2.6 Problems during IT application

- It is found from the analysis that only 5(MANIT, NITR, NITRKL, NITS and NITT) NIT Libraries faced multiple problems in the implementation of IT application in their libraries on the other hand majority of libraries (07) accepted that they do not face any difficulties in implementation of IT application.
- Only five libraries faced problems in the implementation of IT applications in their libraries. Still, present table explored the kind of barriers which those libraries faced as inadequately trained library professionals (4 out of 5) followed by lack of ICT infrastructure and increasing cost of hardware and software (3 out of 5). At the same time, only MANIT faced the problem of lack of support from authorities and lack of coordination among staff.

Areas of Resource sharing among libraries

It was found that on a formal platform no NIT library is sharing their resources with others by stating the common reason that “the need of the users is not same they are different from each library as every NIT is offering different courses.” Another reason

quoted by the respondent was “there is a consortium for NIT libraries named NIT Consortium working for resource sharing as providing negotiated price of electronic resources but due to lack of communication and regular meetings it was not fully executed”. Still, based on the provided data by the in-charges of libraries it was found that Mostly libraries (09) responded for interlibrary lending and document delivery, followed by shared access to an electronic database and information service and training resources & expertise.

Consortium based practice and its impact

The study revealed that 100% of libraries were the member of E Shodhsindhu consortium of India. Along with this 66.67% libraries were the member of J Gate plus. Only three libraries, namely NITD, NITKKR and NITRKL, were also a member of NIT consortium.

To find out the impact of Information technology on resource sharing an opinion based open-ended question had been asked, and it was found that all respondent has different views on resource sharing and consortium-based practice in library services. Where the most popular answer was cost savings. Every librarian/ library in-charge had accepted the fact that consortium based practice gave them the solution of the budget crisis and also found it the best platform for the negotiation of prices by the statutory body. Centralised resource selection was another factor which respondents agreed and recommended other libraries to adopt these types of platforms for their collection development of electronic resources. Some other factors had been pointed out by the librarian as the impact of consortium-based practices. They are as follows;

- increase breadth and depth from access to the shared collection,
- Lessening the burden of price negotiation to individual libraries

- Reducing the burden of licensing negotiations to individual libraries
- Elimination of unnecessary duplication of documents among libraries
- Increased access to the needed information by the users of libraries.

These factors were figured out by analysing the responses received from the interview.

6.2.10 Problems that hinder resource sharing

Out of 10 identified issues from the study, it was observed that the problem of lack of documented policy in resource sharing among NIT libraries is the major constraint and ranked top. The table further points out that the lack of trained staff and the security of materials are the second major issue confronted by librarians. Results also revealed that not a single NIT had documented policy of resource sharing in their libraries.

Strategies to enhance resource sharing

The study pointed out there should be proper planning and execution as the most preferred strategy by library In-charges of NIT libraries. While regarding adequate funds, capacity building, and adoption of the right approach, library In-charges have not disclosed their opinion. All these suggest that the challenges of resource sharing are mostly administrative oriented.

Library Usage statistics

It was found that majority of students visit the library whenever they require any information. They are not in the habit of using the library regularly. Even more than 5 per cent (5.5) of users visited their library once in a month. On the other hand, a total of 29.6% of users visits the library daily.

It was viewed that 54.6% of the respondents were not using the library regularly, and the distribution of the data had been discussed in figure 5.6.4.1. A total of 36.78% respondent accepted that information they require is already available on google. This is why they are not using the library regularly.

Satisfaction level of Users

it was found that out of a total sample of the study, 38.08% of respondents were satisfied with available collection in their libraries and rated it “Good”. The table also shows that 67.72% of the responses lies with-in the good, very good and excellent category of the satisfaction level which indicate that above 60 per cent users of the NIT libraries were satisfied with the available collection in their library.

Users’ Opinion regarding Resource sharing

a) Resource sharing awareness

It was found that less than 50% of the respondents of NIT libraries were aware of the concept of resource sharing. Among all these NITs, the users of NITP were highly (63%) aware of the idea of resource sharing while only 28.1% of students of MANIT were aware.

b) Perception of resource sharing

it was found that 42.7% of respondents were strongly in favour of sharing the information among NIT libraries. And they admit the fact that this kind of sharing will be cost-effective. Since it has been proved that there is a significant variation among the perception of resource sharing within the respondents of NIT libraries in India.

CONCLUSION OF THE STUDY

The 21st century has witnessed a great explosion of knowledge and information during its last few decades. Thousands of journals publish more than ten million articles which include news items, editorials and reading materials in popular print media, as well as, electronic media. The information centres and libraries in present times primary sources of knowledge and information, and these are two reliable components of modern society.

Resource-sharing through Consortia is a sharing arrangement of resources of one library by one and all participating libraries under kernel term of the document collections. Library professionals, technical facilities and mechanical and instrumental aids of the participating libraries are central points of references co-operative. While using the consortium on such an arrangement helps the process of providing information sources to a substantial user community basis in a minimum possible time and at a bearable price by, sharing of the resources through computer access to the vast amount of literature etc. Now, the resources-sharing has turned out to be a need-based activity on giving and take principle.

In the present study, the researcher has considered the ever-changing form of resource sharing/consortia that is transforming at a fast rate. The critical dimensions of network developments relate to access and delivery of data and documents through multiple media in NIT Libraries. So, the present work will benefit professionals of Library Science, network staff and act as a stimulating guide for the librarians and managers of NIT libraries in India.

National Institutes of Technology are the institutes of national importance in India. These institutions are playing a vital role in the promotion of engineering education and research. The libraries are changing their shape and size due to information

technology. To cope up the information need of the users, library and information centres are modernising their infrastructure, collection and services. Information technology is used as a tool by the library professional for collection, organisation, process and dissemination of knowledge. To create new services and update existing services, one has to develop proper ICT based infrastructure in the libraries and information centres.

The analysis covers users' details on various aspects based on the responses communicated by librarians and users analysed statistically. In the last part of the section, the problems faced in a routine manner and suggestions rendered by the respondents have been compiled and analysed.

In the same context, the researcher is determined to propose an ideal resource sharing network model to suit the current demands of the users. It covers all the networking aspects mainly - a relevant requisition list of hardware, software and other requirements, characteristics, objectives, policy issues, functions, funding issues and administrative support and demands of the end-users and all other networking related issues.

The study has focused on a new area of interest; hence, it would be a welcome addition to the growing literature in the library and information science.

The study will throw light on the recent expansions in the area of resource sharing and networking. Therefore, it is hoped that it will be of use to the library and information professionals. The study has a practical orientation. Therefore, it may act as a guide to the information professionals in planning and establishing an information network.

STRUCTURE OF THESIS

The report of the present study be divided into the following chapters:

Chapter 1. Introduction: This is the first chapter of the Thesis, and it sets the background, need of the study and defines the problem of investigation. The objectives, scope, hypothesis and methodology of the study had been explained in the chapter.

Chapter 2. Review of Related Literature: This chapter depicts an evaluative report of the prior studies done and the related literature to the present study. The review describes, summarises, and clarify the essay and give a theoretical base for the research. It helps the researcher putting the present research in context with the available literature.

Chapter 3. Research Methodology: This chapter portrays the steps adopted by the researcher to conduct the study. Including the population of the study, sample size, data collection tools & technique, and analysis methods had been logically explained.

Chapter 4. Data Analysis and Interpretation: In this chapter, the data had been analysed by using descriptive statistics. After defining the data process of making inference and the solution to the problem had been interpreted in the report.

Chapter 5. Proposed model for NIT library network for resource sharing: This chapter of the study attempted to suggest a conceptual model to create a library network for resource sharing among all NIT libraries in India.

Chapter 6. Findings, Conclusion and Suggestions: Presents the major findings and conclusion of the study. It deals with recommendations of the study and suggestion for further future research.