DESIGN AND DEVELOPMENT MODEL FOR NETWORKING AND RESOURCE SHARING

T. Kalbande, Dattatraya[1] and P. Chavan Subhash[2]

[1]Librarian
J. Watumull Sadhubella Girls College of Commerce
Ulhasnagar Dist: Thane (MS)
kalbanded@gmail.com

[2]Librarían
Shri. Asaramji Bhandwaldar College, Deogaion (R).
Tal.Kannad, Dist. Aurangabad. (M.S)
Mob.No: 09422711790
subhashchavan05@gmail.com

ABSTRACT

Now we are living in 21st century & present century is called ICT age. In the ICT era peoples are used the ICT tools in the day to day activities, for example e-purchasing, e-selling, e-prayers, e-friendship with the help of ICT tools. Like that libraries also used varies new ICT tools for provide the quality, instant library services to the users. Now a day's library users not need to the come library but library will come to the user's desktop with the help of modern IT tools, software's & Hardware's.

Keywords: Networking, Resource Sharing, Library, KOHA

INTRODUCTION

A network usually consists of a formal arrangement whereby materials, information, and services provided by a variety of libraries and other organizations are available to all potential users. Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them (Prabhu,2011).

There are number of commercial software in the market which is very costly and small / medium sized libraries cannot afford them. However, now days a number of free software's are also available, some are open-source software like KOHA which is a complete application for automation and networking of libraries. National Informatics Centre has also come-up with a Library Automation Software called as e-Granthalaya which is being given at zero cost to the libraries in India.

The software is useful for automation of in-house activities in a library as well as user services. (Mahajan, 2005).

OBJECTIVES

1. To assess the feasibility of developing a Library Network of Agricultural Colleges.
2. To identify the barriers of Library networking& Resource Sharing.
3. To design a model for implementation of Networking& Resource Sharing in Agricultural College Libraries.

Scope and Limitation of the Study

The population of the study mainly comprised40 Affiliated and Constituents Agricultural Colleges of Mahatma PhuleKrishiVidyapeeth, Rahuri, which have responded to the questionnaire sent.

"Constituent Agriculture College" means a college which is under the direct management of an university, whether located at headquarter or else where in the university jurisdiction of MPKV, Rahuri. (MCAER, 2011).

"Affiliated Agricultural College on permanently non-grant basis "means, a college sanctioned by the state council and affiliated to an university which shall not be entitled for any kind of grant in aid from the State Government (hereinafter) to referred as the affiliated college (NG).(MCAER, 2011).

Hence Affiliated Agricultural College on permanently non-grant basis referred as a Self Financed Colleges for the Present study.

Research Methodology

Present study was done with the help of survey method. "The survey method is one of the most effective and sensitive instruments of research …survey research can produce much needed knowledge." (Kasyap, 1969).

Data Collection

"Data are raw materials of reflection until by comparison, contrast an evaluation they are stepped up to successively higher levels of generation". (Das 1986).

Review of Literature

There is little in the library literature on networking, particularly among librarians at multi-campus institutions. Therefore, this literature review includes articles written by librarians as well as LISc professionals.

Nicholas & Sterling (2014) discussed about the Jamaica Libraries Information Network (JAMLIN), College Library Information Network (COLINET), The Social and Economic Information Network (SECIN), Online Computer Library Centre (OCLC) software. Also they stated OCLC and The UWI Mona Library agreed to allow LIAJA to use the Question Point base management environment of the Library for six months to provide the support that was needed for librarians in Jamaica to practice and develop their competencies. **Kumbhar (2014)** in "Library Networking & Resource Sharing" define the concept of Networking, Objectives of the Library Network like to Improve resources utilization & services level, to enhance resource sharing to avoid duplication of the publication etc, also researcher highlighted the various international networks like UNESCO, IFLA,ARPANET, National Level Networks like INFLIBNET, INSDOC, IISC, DELNET, CALIBNET, BONET etc its services & role in Resource sharing.

Oliveira & Cianconi (2013) identify and analyze the actions in the Network of Libraries and Information Centers on Art in the State of Rio de Janeiro (REDARTE/RJ), in order to promote the production of new knowledge and implementation of new ideas, minimizing the difficulties met by information professionals.

Mizutani (2013) in his document highlighted the historical development of networks between museums, libraries and archives, and on the opening in 2004 of the Art Libraries' Consortium (ALC), a union catalogue of art libraries based in the Tokyo metropolitan area which has been steadily expanding. **Islam (2012)** discussed about varies networks in the country of Bangladesh like Bangladesh-INASP-PERI Consortium (BIPC), Library Consortium of Bangladesh (LiCOB), National Agricultural Information System (NAIS), Social Science Research Network (SSRN), Heath Literature, Library and Information Science Network (HELLIS), Development Information Network on South Asia (DEVINSA), National Science and Technology Information Policy (NASTIP), Bangladesh University Libraries Network (BULN), Bangladesh National Scientific and Library Information Network (BANSLINK) &Population Information Network (POPIN) in detailed & its role for the joint acquisition, digitization, for development of search

engine, for establishment of e-journal center, & the development of digital resources jointly.

Siddike (2012) in his study stated that most of the respondents were unaware about library networking and resource sharing. Whenever they were explained about the merits of networking and resource sharing they were totally amazed and expected the library to take necessary initiatives regarding networking and resource sharing. Among the users, 20 % have given emphasis on establishing library networking and resource sharing system. **Mohammed (2010)** in his research paper discussed the concept of networking, ways for the networking among the Islamic Sharia Court (LAW) Libraries in Nigeria, & Areas of Networking in the areas the researcher stated cooperative acquisition, Inter library loan, reference & information services, technical services, exchange of staff, funding etc.

Proposed Library Network Model

The proposed library network for agricultural college libraries affiliated to Mahatma Phule Krishi Vidyapeeth will be called the **"Mahatma Phule Krishi Vidyapeeth Library Network (MPKVLIBNET)".**

Here all members have different resources and scattered in different places which they can share with one another through distributed network. The following picture explains the structure of distributed network as it existed in various other library networks.

Fig. 1 Library Networking Model

Financial Provision

When planning for library Networking & Resource Sharing, sufficient funds have to be provided by the institutions or the funding agencies for purchasing of hardware, software, furniture etc. for the networking &

resource sharing. It should be noted that if sufficient funds are not available for purchasing the entire software, then the library should developed networking step by step, in only which are of utmost importance for networking & resource sharing.

Organisational Structure

This model has been developed for the co-operation between the agricultural colleges libraries affiliated to Mahatma Phule Krishi Vidyapeeth, Rahuri. The Jurisdiction of MPKV have scattered in eight district of western & North Maharashtra. The resources, which the model intends to share are acquired in a single database as well as on a single site using cloud based server system. For running this model smoothly & regularly the following structure for its control & governing.
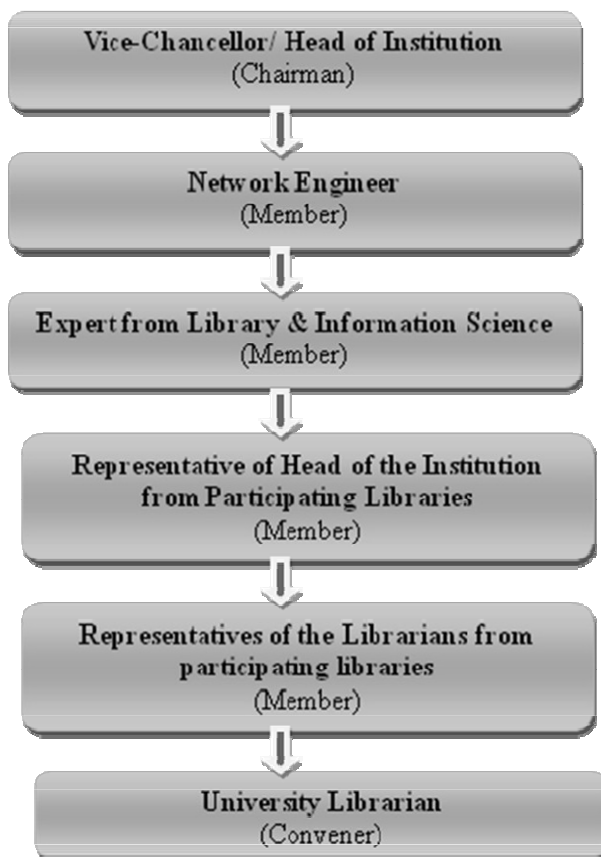
Vice-Chancellor/ Head of Institution
(Chairman)

Network Engineer
(Member)

Expert from Library & Information Science
(Member)

Representative of Head of the Institution
from Participating Libraries
(Member)

Representatives of the Librarians from
participating libraries
(Member)

University Librarian
(Convener)

Fig. 2 Organizational Structure of MPKVLIBNET

Name of the Colleges

Table 1 List of the Colleges under MPKVLIBNET

Sr.No	Name of the Library	Place
1	College of Agriculture	Pune
2	College of Agriculture	Kolhapur
3	Mahatma Phule Krishi Vidyapeeth	Rahuri
4	College of Agriculture	Dhule
5	College of Agriculture	Karad
6	College of Agriculture	Nandurbar
7	College of Ariculture	Bahubali
8	Padmashree Dr.D.Y.Patil College of Agricultural Engineering & Technology	Talsande
9	College of Agricultural Biotechnology	Loni
10	Padmashree Dr.D.Y.Patil College of Agricultural Business Management	Akurdi
11	College of Agriculture	Sonai
12	Krishna College of Agriculture	Rethre(BK)
13	Shreemant Shivajiraje College of Horticulture	Phaltan
14	Loknete Mohanrao Kadam College of Agriculture	Sonsal
15	Dr.Ulhas Patil College of Agriculture	Jalgaon
16	Dr.Ulhas Patil College of Agricultural Engineering & Technology	Jalgaon
17	Padmashree Dr. Appasaheb Pawar College of Agriculture	Baramati
18	Dadasaheb Moashi College of Agriculture	Rajmachi
19	K.K.Wagh College of Agriculture	Nashik
20	College of Horticulture	Sonsal
21	Padmabhushan. Vasant Dada Patil College of Agriculture	Ambi
22	MAEER's MIT College of Food Technology	Loni Kalbhor
23	K.K.Wagh College of Agricultural Biotechnology	Nashik
24	Lokmangal College of Agriculture	Wadala
25	Padmashree Dr.D.Y.Patil College of Agriculture	Talsande
26	Navalbhau College of Agriculture	Amalner

Table 1 *contd…*

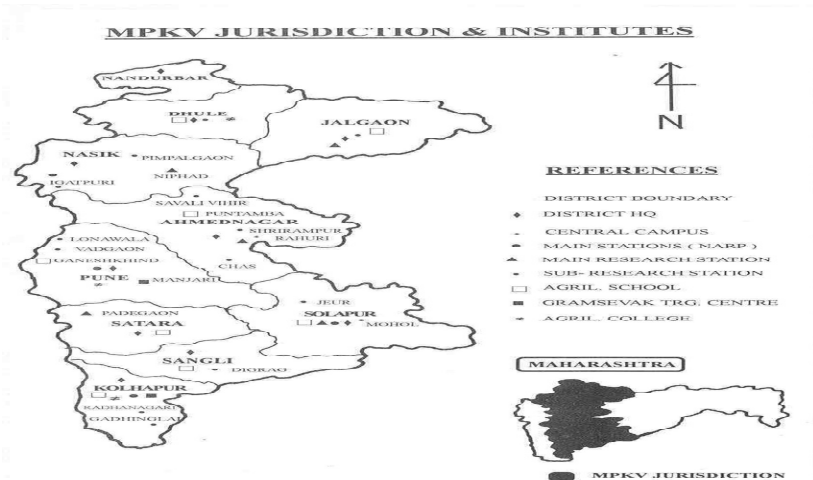| Sr.No	Name of the Library	Place
27	Shramshakti College of Agriculture	Maldad
28	Shramshakti College of Food Technology	Maldad
29	Sadguru College of Agriculture	Mirajagaon
30	College of Agriculture	Phaltan
31	Rajashree Shhatrapati Shahu Maharaj College of Agricultural Business Management	Sangli
32	College of Agricultural Business Management	Gunjalwadi Pathar
33	K.K.Wagh College of Agricultural Business Management	Nashik
34	College of Agricultural Business Management	Loni
35	College of Agriculture	Loni
36	College of Agriculture	Babhulgaon
37	College of Animal Husbandry	Shradanagar
38	K.K.Wagh College of Horticulture	Nashik
39	Sharad College of Agriculture	Jainapur
40	College of Agricultural Business Management	Shradhanagar

Map of Service Areas of Proposed Model

Fig. 3 Map of MPKV

Areas of Resource Sharing

On a Networking & Resource Sharing of agricultural college libraries, it is possible to share the library materials/resources through library request. Following Information Resources provide to users

Library Materials

Library Materials include Books, Manuscripts, Bound Volumes/Current Periodicals, Theses/Dissertations, Institutional Repository, university/ College Publications, Audio /Video Materials.

❖ **Books:** The books (Original or Photocopy) can issue only for Two Months, if required more institute re-issue one time for fifteen days.

❖ **Journals/Magazines/Articles:** Journals/Magazines or Journal Articles are available only on a request. A journal article downloads or scanned send to the concern user as well as librarian by mail. One user can get five research papers free of cost after that he/she pay nominal charges under the scanning as well as postal charges.

❖ **Theses/ Dissertations:** Theses/Dissertations/Projects are available only on a request. A Theses /Dissertations/Projects scanned send to the concern user as well as librarian by mail. And one user can get limited Pages of the theses/ dissertations.

Acquisition of Library Materials

It is need to develop the centralized bibliographic database for the participative libraries like AGRICAT, INDCAT. In the acquisition libraries used copy cataloguing through Z39.50 browsing standard.

In the centralized acquisition libraries follow the following instructions.

❖ **Duplication:** All the libraries avoid the duplication of documents at the time of purchasing process.

❖ **Specification of Subject/Areas:** The libraries will agree to in development of collection on the basis of the subject areas for example one library purchase the books on Agricultural Economics, Agricultural Chemistry, Zoology, Plant Biotechnology etc the second library purchase the books from the Chemical Biotechnology, Food Science & Technology, Farm Technology etc.

❖ **Security:** Students/College staff will pay 1500/- at the time of admition under the head of library deposit fee on a returnable basis.

Library Equipments

Libraries can exchange the limited materials like L.C.D projector, Computers, Audio Visual Equipments etc at the time of training/workshop/seminar etc. otherwise Equipments will not exchange.

Governing Body

1	Head of College/Institute or Principal	Chairman
2	Network Administrator	Member
3	Head of the Departments	Member
4	Representative of Users/Students	Member
5	Librarian	Convener

Hardware & Software Requirement

Each of the member libraries must have at least some of the following hardware. However, the main library (Central Host) may require most of the hardware mentioned below, but with additional disk space. Hardware specifications are given below:

1. One Server/Computer
2. One Printer
3. One Scanner
4. Operating System
5. Telecommunication Network, Telephone, Internet ,LAN,WAN, Switches etc
6. Web Based Library Software

KOHA Open Source Software

Koha is a full featured Integrated Library System (ILS). There is no cost for the license; you have the freedom to modify the product to adapt it to your needs, etc. KOHA is developed initially in New Zealand by Katipo Communications with Horowhenua Library Trust. It is currently maintained by a dedicated team of software providers and library technology staff from around the globe. That by adopting it, the customer becomes "joint owner" of the product. In particular, the customer can

freely install new versions or not, and can take part in new developments by financing them or by carrying them out them self. (http://koha.org accessed on 10/01/2015).

Why KOHA?

❖ **Cost-effective:** Paying licensing fees for proprietary solutions, users of open-source software can often deploy the product using in-house resources. They pay only for needed support or any additional vendor services they require.

❖ **Innovation:** Code is open, users are free to innovate and improve the software to meet their needs free innovation also means that open-source software has much faster development cycles when compared to proprietary software.

❖ **Free/open source software:** KOHA is an economical alternative to reliance upon commercially supplied software. It means the cost involved development, license, upgrading, maintenance etc., lower than commercial software. KOHA does not need the initial cost like commercial software.

❖ **Free/Open source:** KOHA is open source software.

Technology Platform

- Linux operating system: Linux/ ubuntu
- Open source library management system: KOHA
- Database: MySQL Ver. 14.14
- Programming Language: Perl
- Server Version: Apache/2.2.17
- Search engine: Zebra (http://koha.org)

MARC tag has been used to describe the respective records

Table 2 MARC tag

Tag Name	Description
082$a	Call No
100$a	Personal Author Name
245$a	Title of the Book
250$a	Edition Statement
260$a	Place of Publication

Table 2 *contd…*

Tag Name	Description
Tag Name	Description
260$b	Name of Publisher
260$c	Date of Publication
850$c	Holding Institution
942$c	Item Number
952$a	Home Branch
952$b	Holding Branch
952$p	Accession No
952$0	Available
952$c	Shelving Location
952$g	Price

Server Configuration

- Intel (R) Core(TM) i5- 4210U Dual Core
- 1.7 Ghz , 3M3540
- 4 GB DDR3
- Hard disk 05 TB SATA HDD or Above
- Optical Disk/ DVD Writer
- OEM Mother Board
- Keyboard
- Mouse

Client Configuration

- Intel Core i3 Fourth Generation
- 2.33 GHz with 1333 MHz
- 4 GB DDR-II RAM
- 1 TB HDD
- Keyboard
- Optical Mouse

Supporting Hardware

- Printer
- Scanner
- Telephone

- Fax
- Modem
- Switches
- Router
- External Hard Disc
- A.C
- UPS

Supporting Software

- IR/DL Software
- Operating System Windows 98 or latest version
- LAN/WAN
- VoIP
- Internet Explorer
- Programming Language (Java/Perl etc)

TRAINING OF STAFF

Institute or MPKVLIBNET governing body organize the training for the staff

LOCAL AREA NETWORKING (LAN)

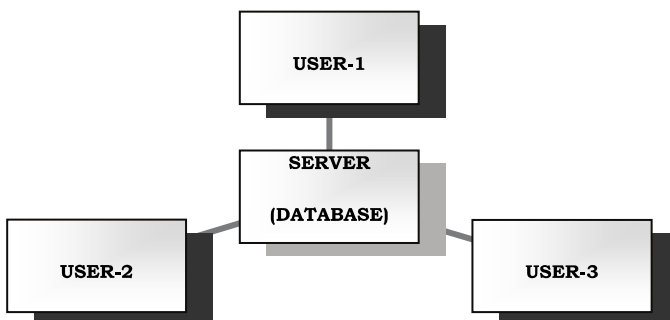Local Area Networking (LAN) should install within the campus for searching to resources by the students, staff & scholars.

Fig. 4 Local Area Networking/Institutional Networking

Model

"A model can come in many shapes, sizes, and styles. It is important to emphasize that a model is not the real world but merely a human construct to help us better understand real world systems. In general all models have an information input, an information processor, and an output   of   expected   results". http://serc.carleton.edu/introgeo/models/whatisamodel.html accessed on 05/09/2014

MPKVLIBNET Home Page

The below picture is a proposed main page of MPKVLIBNET web portal and it gives the information about all types of resources available with the libraries and instructions to search the catalogues effectively.
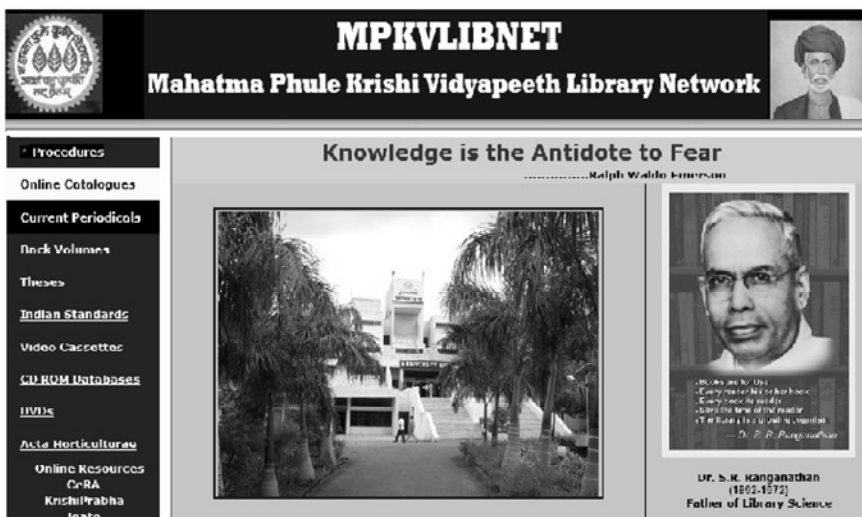

Fig. 5 Home Page of MPKVLIBNET

Search / Browse Interface

This user interface allows the faculty and students to search the bibliographic details of books, journals and other bibliographic records from MPKV server. There are eight search fields are given such as Keyword, Subject, Title, Author, Publisher, Publisher Location, ISBN and Barcode.
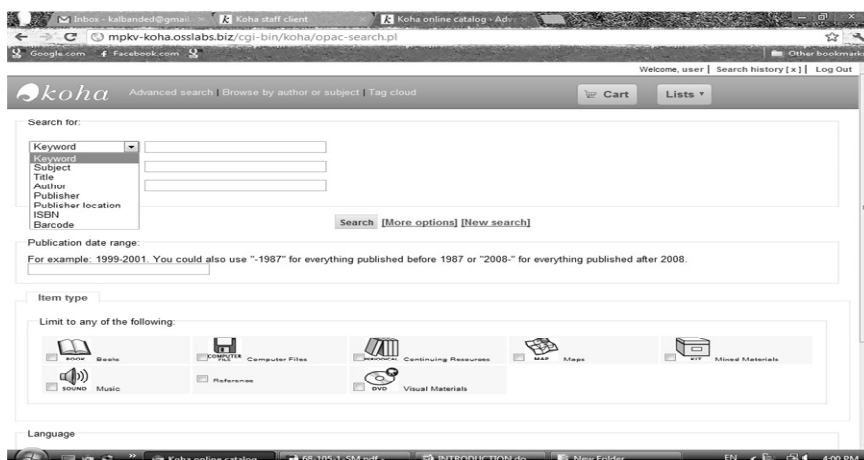
Fig. 6 Opening Screen of the MPKV user interface

Display of OPAC Output

OPAC and online union catalogue of MPKV can be accessed and viewed by selecting field name then enter the search term and click on 'search' button. It will show all the bibliographic record of books on the basis of search term with respect to search field. Book jacket is also enabled for better visualization. As shown on below fig 7.
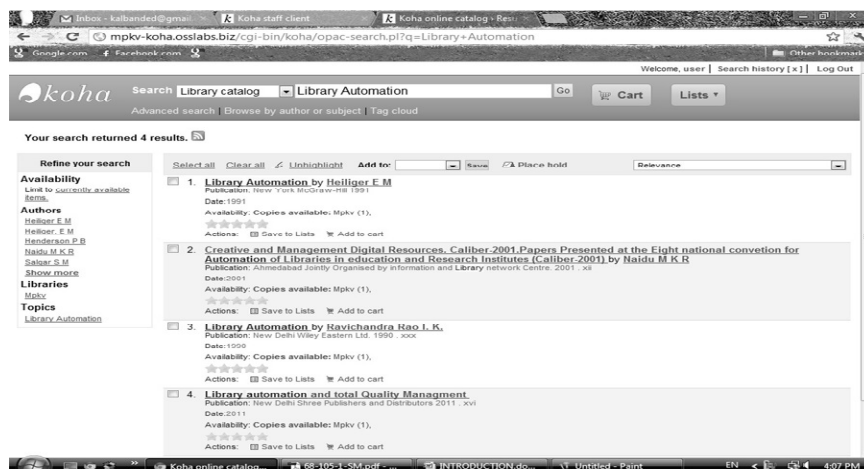

Fig.7 OPAC – Output Search

Selection of Language and Type of Documents

Unicode system has been enabled in this networked model to search user's respective language, also can select / search the resources by selecting the library database for a quick retrieval. As shown below fig 8.

Fig. 8 Selection of Type of documents and Language - OPAC Search Screen

Bibliographic Details and Its Locations

The below figure displays the bibliographic details of a selected record with its available locations like institution name, status, call number and other relevant information.(Kalbande, 2012)

Fig. 9 Bibliographic Details and its Location

CONCLUSION

A network usually consists of a formal arrangement whereby materials, information, and services provided by a variety of libraries and other organizations are available to all potential users. Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them. There are number of commercial software in the market which is very costly and small / medium sized libraries cannot afford them. However, now days a number of free software's are also available, some are open-source software like KOHA which is a complete application for automation and networking of libraries. National Informatics Centre has also come-up with a Library Automation Software called as e-Granthalaya which is being given at zero cost to the libraries in India. The software is useful for automation of in-house activities in a library as well as user services.

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