Chapter VI

BHARATHILIBNET
- A Prototype Design
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6.1 INTRODUCTION

During the recent period quite a large number of libraries and information centers are forming networks for sharing the resources among the participating Libraries. The advent of computer networking as an accepted part of the library and information infrastructure has had a very significant impact on the way in which library and information systems are perceived. India is thus on the threshold to a new era of computer communication networks both for general purposes and for library and information purposes. The following principles are motivated behind the networking:

1. Maximizing the utilization of existing information resources / collection by sharing
2. Providing speedy access to information resources located at different places through communications channels for mutual benefit.
3. To avoid duplication in the information process and control over the collection.

The escalating cost of information resource materials, increasing cost of processing documents and their information contents, decreasing budgets in terms of real worth and vide use of computers have also contributed to the development of networks. Network evolution shows two trends:

1. A banding together of various type of information resources (e.g. Libraries, Information systems, Referral centres) into a type of communication cooperative.
2. Networks of computerized information activities, presumably interconnected to permit machine-machine interface. It is generally assumed that man will interface with the computers through remote real time access terminals.
6.2 LIBRARY NETWORKS

Information networks in the broadest sense can be any formalized system of information exchange. But, in modern information networks, technology is utilized to link libraries, specialized data resources, or individuals to the persons or institutions in need of information. 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.

6.3 THE PROPOSED LIBRARY NETWORK MODEL

The proposed library network for college libraries affiliated to Bharathidasan University will be called the “Bharathidasan University Library Network (BHARATHILIBNET)”.

Taking into consideration the geographical distance, it is suggested to have a distributed network among the Bharathidasan University affiliated college libraries. In a distributed / fully connected network, members who have equal, but different, resources are connected with every other member. The foremost and basic rationale of the distributed network is the sharing of different resources of the network members by each other. The reasons for opting distributed network for the proposed BHARATHILIBNET are:

- Failure at one node / site will not collapse the system
- Quick processing of queries
- Increased flexibility and reliability in the network
- Lesser cost for storage and maintenance of database
- Maintaining of standardisation of database does not arise
• Administrative problems of network may not be arise among the participants
• Need for sophisticated and communication infrastructure does not arise

Here all members A, B, C, D, E, have different resources 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.

6.4 OBJECTIVES OF BHARATHILIBNET

In the view of the prevailing conditions and lack of ICT infrastructure facilities in the surveyed libraries as indicated by the surveys, it is proposed that initially it will be a bibliographic information network, since a machine readable bibliographic database is a pre-requisite for networking and resource sharing. Further, the network will have the provision to access internet and avail its facilities and establish full connectivity to the internet eventually. In this sense, the proposed network will not be a mere library network confined to sharing library activities and resources, but much more than that it is more users oriented, providing not only information resources but also a wide variety information services. Further it facilities scholarly communication instantaneously among the users having the same interest at the global level. Keeping the above points in view, the propose library network will have the following objectives.
• To provide bibliographic access to the information resources available in the college libraries affiliated to Bharathidasan University.
• To utilize the resources in a better way, by disseminating the specific areas of interest available in the region.
• To generate new services and to improve the efficiency of existing ones.
• To develop forums for interaction among information professionals and users and thereby, helping them seeking solutions to common problems.
• To promote and support adoption of standards in library operations.
• To form a BARATHILIBNET Library Consortia.
• To promote better understanding among participating institutions and libraries.
• Easy access to information resources available throughout the Libraries of Bharathidasan University and college libraries.

6.5 INFORMATION RESOURCES UNDER BHARATHILIBNET

On networking of Bharathidasan University College libraries, it is possible to provide the following resource and services to the user community.

• Books
• Manuscripts
• Journals
• Catalogues
• Preprints
• Theses and Dissertation
• Bharathidasan University Publications
• Institutional Repositories
• List of A-V Materials such as Video Cassettes, Audio Cassettes, Slides, CD-ROM Service etc.
6.6 IDENTIFYING THE NETWORK NODAL CENTRES

In this section, an attempt has been made to identify the institutions of excellence in order to designate various nodal centre based on the findings of the survey. The institutions of excellence have been identified using the following criteria these are information resources, financial resources, facilities available and reputation of the institutions. Since the proposed network is to be served at the regional level, there needs to be a node in each region for effective information exchange. Hence, geographic area also has been included as one of the criteria. Based on the above criteria six such nodal centres have been identified.

2. A.V.C. College (Autonomous), Mayiladuthurai.
3. J.J. College of Arts and Science, Puthukottai.
4. Bon Secours College for women, Thanjavur.
5. Dhanalakshmi Srinivasan College of Arts and Science for Women, Perambalur.

6.7 ARCHITECTURE OF BHARATHILIBNET

Fig. 6.1 Architecture of BHARATHILIBNET
6.8 SERVICE AREAS OF BHARATHILIBNET

Fig 6.2 Service Areas of BHARATHILIBNET

6.9 IMPLEMENTATION OF THE BHARATHILIBNET PLAN

It has been suggested that before that actual implementation of the proposed BHARATHILIBNET, a detailed system analysis has to be conducted.

The success of this project depends upon the following factors:

- Having adequate computer facilities.
- Appointing and training of the right personnel for development and maintenance of the system.
- Conducting the participating librarian meet regularly.
- Design and development of bibliographic database.
- Existence of an efficient and reliable communication system using standards.
6.9.1 Phase-wise Implementation

Considering the existing infrastructure facilities, financial resources, manpower and technological aspects, the implementation of BHARATHILIBNET is considered in a phase manner.

The phase wise implementation has been based on the following conditions:

- Getting the Libraries as well as users tuned to resource sharing via network.
- Reasonableness of the cost.
- Introduction of Information and Communication Technology culture in the Libraries affiliated to Bharathidasan University.

It is felt that under the given circumstances, a two phase implementation is ideally suitable for implementing the BHARATHILIBNET. The phase-wise tasks to be undertaken are discussed hereunder

6.9.2 Phase I

The bibliographic database of the library resources will be collected from the surveyed colleges. Database of selected college libraries will be in various file formats hence, Marc Edit (5.2 versions) software will be used to convert various file format into MARC21 format for import into database. Identified, installed and customized the software solution to enable the online union catalogue model and will be named as BHARATHILIBNET.

6.9.2.1 Technology Platform

- Linux operating system: Ubuntu 10.4 version
- Open source library management system: KOHA
- Database: MySQL
- Programming Language: Perl
- Search engine: Zebra and Z39.50
KOHA Integrated Library Automation Software will be installed at the University Central Library. Koha library management system modules will be customized for online union catalogue model. Metadata will be created as to the MARC 21 format and multiple library databases will be created. 5, 20,000 bibliographic records pertinent to selected library surveyed will be converted into MARC 21 format and the same will be imported into KOHA.

6.9.2.2 The following MARC tag has been used to describe the respective records

<table>
<thead>
<tr>
<th>Tag Name</th>
<th>Description</th>
<th>Tag Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>082$a</td>
<td>Call Number</td>
<td>100$a</td>
<td>Personal Author Name</td>
</tr>
<tr>
<td>245$a</td>
<td>Title of the Book</td>
<td>250$a</td>
<td>Edition Statement</td>
</tr>
<tr>
<td>260$a</td>
<td>Place of Publication</td>
<td>260$b</td>
<td>Name of Publishers</td>
</tr>
<tr>
<td>260$c</td>
<td>Date of Publication</td>
<td>942$c</td>
<td>Item Number</td>
</tr>
<tr>
<td>850$a</td>
<td>Holding Institution</td>
<td>952$a</td>
<td>Home Branch</td>
</tr>
<tr>
<td>952$b</td>
<td>Holding Branch</td>
<td>952$p</td>
<td>Accession Number</td>
</tr>
<tr>
<td>952$0</td>
<td>Available</td>
<td>952$c</td>
<td>Shelving location</td>
</tr>
<tr>
<td>952$g</td>
<td>Cost, normal purchase price</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.9.2.3 Hardware and Software Requirements

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:

6.9.2.3.1 Server Configuration

- Intel Quad Core 2 Xeon E5310
- 1.6 Ghz with 1066 MHz
- FSB 8 MB L2 cache
- Intel 5000p Chipset
6.9.2.3.2 Client Configurations

- Intel Core 2 Duo E6550
- 2.33 GHz with 1333 MHz
- 4 MB L2 cache
- Intel G31 Chipset
- 1 GB DDR-II RAM
- 250/320 GB SATA HDD 7200 RPM
- 8X DVD Writer
- TVS Mechanical Keyboard
- Optical Mouse
- Acer 19” TFT WS Monitor

6.9.2.3.3 Other Hardware Requirements

- Fax (with dedicated phone line)
- Modem (with dedicated phone line)
- Barcode Printers
- Scanners
- Laser Printers
- Portable data capture units
- Backup Devices
- CD-ROM Drives
- Mirroring Server
6.9.2.3.4 Software Requirements

Each of the participating libraries must have the following:

- Software for effective network operation as well as the library automation.
- LAN (Novel/Ethernet, to begin with, it may be optional)
- Windows operating system 98 or above
- Graphics Software such as Photoshop, Illustrator, Coral Draw
- Internet Explorer 6.0 (minimum)
- Ms –Office 2003 or higher
- DBMS packages
- Digital Library / Institutional Repositories Software
- Library automation packages.
- Programming Languages

6.10 Phase II

The following task shall be accomplished in Phase – II.

- To validate the total metadata collected from different college libraries.
- Designing a public domain server by BHARATHILIBNET on which the server side software can be installed and ensuring that such servers made available as per the requirements of the chosen library automation and networking solution.
- Design and development of BHARATHILIBNET web site to links online union catalogue resources of member libraries. This will be accessible via a link on the BHARATHILIBNET web site.
- Facilitate to access intellectual assets of Bharathidasan University institutional repository and consolidate the e-content of affiliated colleges.
- To identify, collect and dissemination of open sources like DOAJ, DOAR, NDLTD and other invisible sites like EEVL, CASSIR, Completplanet etc.
• To train the scholars and library professionals to access the electronic resources through information literacy programmes.
• Organization of training programmes.
• Co-ordinate with other regional, national and international library network for exchange of information and resources.

6.11 PROPOSED PROTOTYPE OF BHARATHILIBNET DESIGN

The output design of the prototype network of BHARATHILIBNET is shown in the following figures (Fig 6.3 to 6.8).

6.11.1 BHARATHILIBNET – HOME PAGE

This below figure shows the main page of BARATHILIBNET and it gives the information about the participated libraries, the types of resources available with their libraries and instruction to search the catalogue effectively. This provides the external links of open access resources, Institutional repositories and other useful resources for teaching and learning.

Fig 6.3 Home page of the BHARATHILIBNET
6.11.2 SEARCH / BROWSE INTERFACE

This user interface allows the faculty and students to search the bibliographic details of books, journals and other bibliographic records from BHARATHILIBNET server. There are ten search fields are given such as Keyword, Title, Author, Language, Publisher, Publisher Location, Subject, Series Title, ISBN and Call Number.

![Fig 6.4 Opening Screen of the BHARATHILIBNET user interface](image-url)
6.11.3 DISPLAY OF OPAC OUTPUT

First you have to select 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 6.4.

![Figure 6.5 OPAC – Output Search](image)

Figure 6.5 OPAC – Output Search
6.11.4 SELECTION OF LANGUAGE AND TYPE OF DOCUMENTS

Unicode system has been enabled in this networked model to search user respective language, also can select / search the resources by selecting the particular library database for a quick retrieval. As shown on below fig 6.5 and 6.6.

![Fig 6.6 Selection of Type of documents and Language - OPAC Search Screen](image-url)
6.11.5 ACCESS OF MULTI-LANGUAGE RESOURCES

The below figure displays the resources that are available in multiple languages and it would support the user’s community to view their bibliographic details in their respective languages.

![Multi-type Language Resources](image)

**Fig 6.7 Multi-type Language Resources**
6.11.6 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.

Fig 6.8 Bibliographic details and its locations
6.12 FUNCTIONS OF BHARATHILIBNET

Primary reasons for proposing BHARATHILIBNET Consortia are to provide an extensive access to information materials to the users of member libraries and other libraries. The functions of proposed consortia are:

- Those that serve the users/patrons.
- Those that serve the member libraries directly and the patrons indirectly.
- Those that support the network structure.

6.12.1 Composition of BHARATHILIBNET

The composition of the BHARATHILIBNET consists of the following:

- The Head of the member institutions are the members of the consortium of BHARATHILIBNET.
- The librarians of the concerned colleges affiliated to Bharathidasan University.
- The chairman and the member secretary will be on a rotation basis for two years and extendable by the network if needed.

6.12.2 Powers and Functions

The powers and functions of the BHARATHILIBNET includes:

- On 15 days notice the consortium shall meet at least once in an academic year and as and when necessary.
- The consortium meeting shall be convened by the Member Secretary in consultation with the Chairman and can be held at any member institution.
- The head of the Bharathidasan University where the meeting of the consortium is proposed shall be the chairman of that meeting.
- Any amendment shall be passed by a two-third majority of the total members of the BHARATHILIBNET.
6.12.3 Finance

There are two funds, namely BHARATHILIBNET funds and the BHARATHILIBNET local fund will be operated:

- The BHARATHILIBNET creates a fund, which is called “BHARATHILIBNET Fund”.
- Each BHARATHILIBNET member contributes initially Rs. 5,000 and Rs. 2,000 for annual renewal subscription.
- The fund received will be utilised for providing Union Catalogues/ Common Information / Common Services to each member of BHARATHILIBNET and strengthening the same.

6.12.4 Admissions of New Members to the BHARATHILIBNET

- All members shall have a suitable computer and independent telephone line with fax machine, etc.
- The BHARATHILIBNET accepts any other colleges affiliated to Bharathidasan University as an institutional member if it creates its library database using the standard database and abides by the terms, conditions and rules of BHARATHILIBNET.
- BHARATHILIBNET explores and advises colleges affiliated to Bharathidasan University willing to become members of BHARATHILIBNET on how to convert the existing library records into acceptable standards to BHARATHILIBNET.
- The BHARATHILIBNET should have further plans for Online Access to International Databases.
6.13 TASKS AHEAD – New Challenges

The time required for the execution of the proposed BHARATHILIBNET may be of 18 months to 24 months to complete the proposed library network. Considering the activities listed in Phase I, ten months may be required. The activities in Phase II may be executed within eight months. Therefore the proposed BHARATHILIBNET is to be completed within 18 - 24 months.

Taking into the significance of the BHARATHILIBNET Design, the investigator will submit the same to the authorities of the Bharathidasan University and would emphasise on the immediate adoption and execution of the proposed plan. Accordingly the authorities have to plan the financial implications, manpower training programmes and development of necessary infrastructure facilities in the respective colleges affiliated to Bharathidasan University in order to accomplish for the successful implementation of the BHARATHILIBNET Design.

1. BHARATHILIBNET will be interested to help the libraries in tapping the tacit knowledge available in their Institutions and to contribute for the development of the Knowledge Repositories and networking the knowledge resources.

2. BHARATHILIBNET will be support the establishment of Knowledge Centres in university library. The plans are under consideration for establishing a Central Institutional Repository for the member-libraries in order to tap the tacit knowledge available with the researchers, scholars and the faculty members.

3. BHARATHILIBNET will be interested to promote the usage of network resources and also to help the local libraries in the development of the digital content.

4. BHARATHILIBNET wants that all the libraries affiliated to Bharathidasan University should become a part of the network and utilize the services and resources created for their researchers and scholars at much affordable cost.
5. BHARATHILIBNET wants the official of BHARATHILIBNET in an interactive mode and it brings the end users closer to BHARATHILIBNET.

6. BHARATHILIBNET will launch the technical support system for Koha-the open source integrated library system in order to help the affiliated college Libraries for adopting the open source software. An online portal has been launched by BHARATHILIBNET. It will be operational on 24/7 basis against a nominal registration fee.

### 6.14. EXPECTED BENEFITS OF BHARATHILIBNET

This proposed network model will prove beneficial in the following ways:

1. The network would particularly benefit the students and faculty members in colleges situated in rural and remote areas as well as researchers who have not, by and large, benefited from the existing resource sharing networks of the region.

2. The proposed network model will provide a library resources and information portal by bringing together, organizing and disseminating information in a coordinated approach.

3. It will provide integrated access allowing greater search capabilities across multiple databases.

4. By having an integrated interface, the search will be performed on all available sources and be transparent to the user. Time efficiency is gained.

5. Licensing arrangements would allow a greater amount of full text availability and users would thus immediately have access to the articles of choice.

### 6.15 SUGGESTIONS FOR BHARATHILIBNET

The followings are few suggestions made for successful implementing and sustainability of BHARATHILIBNET measures may be helpful in developing this network:

1. State level and national level participations would be required for the coordination of such network, and ensure adequate and reliable funding.
2. Continuous supports by the policy maker become the necessity for sustainability of information network.

3. Provision of adequate funding facilities for IT based information product and services.

4. Maintenance of infrastructural facilities in all the libraries.

5. Arranging training programme for frequent upgrading of knowledge on information services in libraries.

6. The structure of the network such that it does not affect information accessibility.

7. Frequent evaluation of networking activities will enable the network providers for the planned way to improve further endeavors. This will enable effective information exchange and dissemination within the member without duplicating of resources.

8. All the bibliographic databases of the networking libraries should support standard format for lining databases even in case of upgrading hardware and software in the wake of technological changes.

9. The nodal agency have selected for the proposed network made availability with necessary staff, resource collection and IT infrastructure. This nodal agency must have the standard policies and procedures among the member libraries in the network for the efficient cooperation and resource sharing.

6.16 RECOMMENDATIONS FOR FURTHER RESEARCH

The investigator, based on the research, identified the following topics relevant to the area of this study are suggested here for future research.

- Design and Development of Information System for Colleges Affiliated to Bharathidasan University.

- Networking of University Libraries in Tamil Nadu

• Networking and Resource Sharing among Arts and Science College Libraries in Tamil Nadu.
• Networking of Online Union Catalogue of College libraries in Tamil Nadu.

6.17 IMPLICATIONS OF THE STUDY
The present study has the following significant implications.
• The study has focused on a contemporary 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 developments in the area of networking. Therefore it is hoped that it will be of use to the library and information professionals who are involved in networking in general.
• The study has a practical orientation. Therefore, it can act as a guide to the information professionals in planning and establishing an information network for college libraries.
• The study is inter-disciplinary in nature. As such, it is not only the library and information professionals who would be benefited but also others who would find newer and quicker ways of meeting their information needs.

6.18 CONCLUSION
Today we have many consortia in the country which have been proved useful but hardly find any local and regional network except a few which are operational and achieving their objectives. Inter library lending within the same city is also almost absent, when there could be a limited problems in implementation of the same. Thus the BHARATHILIBNET programme aims to contribute the modernization of academic libraries. It will also improve the inter library loan services among the participating libraries with smooth and speedy exchange of information through telecommunication links. BHARATHILIBNET would be a major step in communication and serve as a focal point for the Bharathidasan
University and its affiliated college’s academic community. The success of the networking depends mainly upon proper planning and appropriate decisions taken by the appropriate authority from time to time. In the conclusion, it can be said that BHARATHILIBNET would be a major step for the academic community of Bharathidasan University and its affiliated institutions if it will be implemented in a proper way and the study revealed that there is scope for implementing the network in phase manner and the models designed in the chapter can be used implementing the project. The same network model may be customized in other university areas to have higher academic library network in the state.