Information and communication technology infrastructure in special libraries in Kerala

Mohamed Haneefa K
Lecturer
Department of Library & Information Science
University of Calicut, Kerala
Email: haneef4u@gmail.com

Information and Communication Technology (ICT) infrastructure is an important resource of a modern library or information centre. ICT is the electronic means of capturing, processing, storing and communicating information. It encompasses an array of hardware, software, services and networks that enable access to digital information. This study investigates the current state-of-the-art information and communication technology infrastructure and the extent of use of electronic information resources in special libraries in Kerala. The following methods were used to collect data for the investigation: (a) questionnaire surveys of librarians, (b) semi-structured interviews with librarians and (c) observational visits in the libraries. All the special libraries of Kerala that were using information and communication technologies were selected for the study. The data collected were analysed and inferences made based on standard statistical methods. The investigation provides useful information about the current state-of-the-art ICT infrastructure and use of electronic information resources in special libraries in Kerala. Though the special libraries in Kerala have hardware, software and communication facilities to some extent, ICT based resources and services are not reaching the users to the expected extent. This has severely affected the provision of ICT based resources and services. The findings of this study would assist special libraries in India to develop strategies and policies that could make better use of ICT based resources and services.

Introduction

The availability of right information at the right time and in the right form is of utmost importance to users for their knowledge and developmental activities. Developments in Information and Communication Technology (ICT) have greatly changed the methods of information handling. ICT may be any combination of tools and procedures that facilitate the generation, acquisition, storage, organisation, retrieval, searching, viewing, updating and transmission of information using electronic means. The tools used in ICT include computer programs, databases, communication networks, analysis and design methods, programming languages, artificial intelligence, knowledge bases, etc. ICT has long standing influence in almost all areas of human activity. Over the past two decades, libraries have become increasingly aware of the revolutionary impact of developments in information and communication technology on their key functions. The application of ICT facilitates easy and instantaneous access to information. It provides opportunities for libraries and information centres to widen the scope of their resources and services and to increase their significance within the organization they serve. The increasing availability of information in machine readable form allows many information needs to be satisfied with decreased involvement of libraries and librarians.

Although there is already a rich and extensive body of literature investigating the application of information and communication technologies in libraries, this study focuses on ICT infrastructure in special libraries. Moorthy and Karisiddappa assessed the use of information technology infrastructure and the extent of use of electronic media in libraries in India. They reported that majority of libraries were using CDS/ISIS as library software and LibSys software was a distant second. They also found that majority of libraries under survey have purchased the software while a few libraries reported to have developed the library automation software in-house. Furness and Graham presented that libraries used a wealth of different software packages depending upon particular applications. In a paper titled “Application of information technology (IT) in special libraries, information and documentation centres in Chennai: a study of its impact on LIS”, Kasirao presented that Foxpro, dBase, ORACLE, Visual Basic and indigenous software packages were in popular use for
IT application services in special libraries in Chennai. Ali's paper, "Application of information technology in the educational media libraries in Delhi", assessed that out of the seven libraries studied, four libraries were using locally designed packages whereas the other three used branded software.

Common applications of ICT in information services include access to databases and other electronic information resources by remote users through networks, electronic file transfer, including internet protocols like FTP, electronic messaging through e-mail, online database searching as well as CD-ROM databases in a LAN/WAN environment. Various electronic databases, and electronic and online journals had a profound impact on the libraries. As Barlow and Graham found in their 1999 study, majority of the libraries used commercial online databases. Communication technologies have enabled the establishment of many infrastructure and library networks, which heralded a new era in resource sharing, exchanging information and communication between libraries. Sharma pointed out the role-played by information technology in special library environment in India.

Kerala is the most literate state in the country and libraries and information centres have an important place in the educational system in the state. No research study conducted to assess the ICT infrastructure in special libraries in Kerala. It is very relevant and essential to know what is the status/position of special libraries in the Kerala state. This study provides current state-of-the-art ICT infrastructure in special libraries in Kerala.

Aim and objectives of the study

The aim of the study was to investigate the current state-of-the-art information and communication technology infrastructure in special libraries in Kerala. In order to fulfil this aim, the following specific objectives were identified:

1. To assess the current state-of-the-art information and communication technology infrastructure in special libraries in Kerala.
2. To compare the information and communication technology status among the special libraries in Kerala.
3. To assess the contemporary use of electronic information resources in special libraries in Kerala.
4. To identify and analyse the specific factors that promoted or hindered the use of electronic information resources in special libraries in Kerala.
5. To suggest measures for improvement of existing ICT based resources and services.

Methodology

Three methods viz., questionnaire surveys and semi-structured interviews with librarians and observational visits in the libraries have been used in data collection.

Structured questionnaires (Appendix A) were prepared and administered to chief librarians. The purpose of questionnaire was to obtain data regarding the state-of-the-art ICT infrastructure in special libraries in Kerala. These questionnaires were distributed to chief librarians with a cover letter indicating the significance of the study and the intended plans for the results. Telephone and face-to-face interviews were also conducted with chief librarians using a semi-structured interview schedule. The purpose of the interviews was to complement the quantitative information obtained by the questionnaire with more detailed qualitative information. Observational visits were conducted in the libraries to collect information about the current state-of-the-art ICT infrastructure and to assess the degree of the utilisation of electronic information resources.

All the special libraries of Kerala state using information and communication technologies for their operations and services were selected for the study. The Directory of Libraries in India (2001), Directory of Scientific and Technical Libraries in India (1988) and Directory of Libraries in Kerala (1976) were used to identify the names, administrative status and addresses of libraries for the study. Since the directories were dated, information was verified telephonically and through personal visits. Thirty-one libraries that were using information and communication technologies were selected for the study. But despite several attempts one institute library did not permit data collection, so it was excluded from the list. Finally, 30 libraries (Appendix B) were selected for the study.
Results and discussion

The data collected by above mentioned tools were analysed and inferences made based on standard statistical methods. Analysis of the data obtained through the questionnaires, interview schedules and the observation using both quantitative and qualitative measures provided an in-depth interpretation for fulfilling the five research objectives. The thirty institutions belonged to four categories, viz., central government, state government, central government autonomous and state government autonomous.

Hardware

The analysis reveals that most of the (92.3 per cent) libraries of Central Government autonomous institutions and 71.4 per cent of the State Government autonomous institutions have separate computer server in the library. All the libraries of different categories of institutions have computer nodes or workstations. Majority (76.7 per cent) of the libraries except State Government institutions have dot matrix printer. A few (36.7 per cent) libraries except State Government institution libraries have inkjet printer. Majority of the libraries of Central Government autonomous institutions (76.9 per cent) and State Government autonomous institutions (57.1 per cent) have laser printer. Only the Central Government autonomous institution libraries have barcode printer (30.8 per cent), and barcode scanner (46.1 per cent). Central Government autonomous institutions have CD-Net Server (30.8 per cent) and CD-ROM Tower (38.5 per cent) in their libraries. Majority of the institutions except Central Government institutions have backup devices, and CD Writer in their libraries, but Central Government autonomous institutions are predominant with these hardware. Majority (76.7 per cent) of the libraries in all the categories of institutions have UPS. Four libraries have some other hardware like data capturing unit, digital camera, planetary scanner, portable barcode reader, network laser printer, etc.

It is found that majority of the special libraries in Kerala have basic hardware facilities like servers, computer workstations/nodes, printers, etc. However in majority of the cases it was underutilised. The libraries of Central Government autonomous institutions have better hardware facilities including scanner, barcode printer, barcode scanner, net server, CD-ROM tower, CD-writer, etc. A good number (33 per cent) of the libraries need more computer terminals and devices like printers to provide ICT based resources and services. Seven libraries (23.3 per cent) have very poor hardware and is not even adequate for library automation.

Software

To bring the hardware establishment into activation, proper software facilities are required by the special libraries to serve up-to-date information to the clientele. The analysis shows that all the libraries have library management software, whether it is commercially prepared or in house prepared. A few (20 per cent) of them have digital library software like Greenstone. Again a few (23.3 per cent) of them have CD-net management software. Majority of the institutions have DTP Software like MS Office in their libraries. Majority of the libraries are using Norton antivirus software. A few of them also have other software like Winspiris, Adobe Acrobat Reader, Photoshop, DSpace, etc.

As in Figure 1 a good number (46.7 per cent) of special libraries in Kerala are using Windows NT as their Network Operating System. Linux is the distant second NOS with 30 per cent libraries.

Use of library management software

Library management software package play a key role for the success of library automation. There are a number of library automation software packages in use in India. Responses indicate that the organisations surveyed use a wealth of different software packages depending upon particular application. The analysis shows that special libraries in Kerala are more interested in commercial software packages. There are 11 software packages preferred by 23 libraries (Figure 2). It is found that CDS/ISIS is used more in libraries (23.3 per cent) than any other software. Libsys software is a distant second with 16.7 per cent of libraries. Two libraries of State Government autonomous institutions are using Libsoft software. Seven libraries have developed the library management software in-house. The other software used are Alice for Windows, SLIM++, Winisis, Winsoft, Winlis, Chronicles 2001, E-grandhalaya and LibsuitASP+.

Majority of the libraries have network version of library management software and have OPAC and online help facilities.
Use of DBMS/RDBMS

Use of DBMS/RDBMS is very useful for managing vast amount of digital information. Libraries of 50 per cent of the Central Government institutions, 15.4 per cent of the Central Government autonomous institutions, and 14.3 per cent of the State Government institutions are using CDS/ISIS for their database management activities. It is also found that libraries of about 15.4 per cent of the Central Government autonomous institutions and 50 per cent of the State Government institutions are using ORACLE as their DBMS. The other RDBMS/DBMS used are dBase (6.7 per cent), FoxPro (6.7 per cent), MS Access (16.7 per cent) and WINISIS (6.7 per cent).

Use of digital library/DTP/antivirus software

Libraries are also using different software like digital library software, DTP software, Antivirus software, etc.
LIST OF SPECIAL LIBRARIES

1. Central Institute of Fisheries Technology (CIFT), Cochin
2. Central Marine Fisheries Research Institute (CMFRI), Cochin
3. Central Plantation Crops Research Institute (CPCRI), Kasaragod
4. Central Tuber Crops Research Institute (CTCRI), Trivandrum
5. Centre For Development Studies (CDS), Trivandrum
6. Coconut Development Board (CDB), Cochin
7. DOEACC Center, Calicut
8. Electronic Research and Development Centre (ER& DC), Trivandrum
9. Fact Engineering and Design Organisation (FEDO), Cochin
10. Fluid Control Research Institute (FCRI), Palakkad
11. Indian Cardamom Research Institute (ICRI), Myladumpara
12. Indian Institute of Information Technology and Management Kerala (IIITMK), Trivandrum
13. Indian Institute of Spices Research (IISR), Calicut
14. Kerala Forest Research Institute (KFRI), Trichur
15. Kerala Industrial Training and Consultany Organisation (KITCO), Cochin
16. Kerala Institute of Local Administration (KILA), Thrissur
17. Kerala State Planning Board (KSPB) Trivandrum
18. Kochin Refinaries, Cochin
19. Liquid Propulsion Systems Center (LPSC) Valiamala, Trivandrum
20. Marine Products Exports Development Authority (MPEDA) Cochin
22. Regional Cancer Centre (RCC) Trivandrum
23. Regional Research Laboratory (RRL) Trivandrum
24. Rubber Research Institute of India (RRII) Kottayam
25. Spices Board, Cochin
26. Sree Chithira Tirunal Institute for Medical Sciences and Technology, (BMT Wing), Trivandrum
27. Sree Chithira Tirunal Institute For Medical Sciences And Technology, (Hospital Wing), Trivandrum
28. Technopark Library, Trivandrum
29. Tropical Botanical Garden and Research Institute (TBGRI), Trivandrum
30. Vikram Sarabhai Space Centre (VSSC), Trivandrum
The analysis shows that 6 libraries are using digital library software and among these, 5 libraries are using Greenstone Digital Library Software and one library is using ACADO software. As far as the DTP software are concerned, 66.7 per cent of the libraries are using MS Office software, 3 libraries are using Page Maker software and only one library is using Corel Draw software. Norton is the most favoured antivirus software with a percentage of sixty. Two libraries are using PC Cillin software and one library is using AVG software. It is also found that Central Government autonomous institutions are comparatively good. in these software, four of them are using Greenstone, and 8 are using MS Office and Norton Antivirus.

The analysis of the data received from the interviews of the chief librarians reveals that most of the libraries have library management software but majority of them are not successful in using the software or their software are not sufficient for complete automation and ICT application in their libraries. Few libraries indicated that their library management software are good. On observation it is found that about 40 per cent of the libraries have somewhat good software, including library management software and other software like MS Office, DBMS, etc., but in this case also except few libraries, most of them are not completely utilised their software properly, some modules are not utilised or library professionals do not know how to use them properly.

**Telecommunication and networking**

The transmission of data from one point to another is very essential. Libraries all over the world are using telecommunication and networking technology for transmitting digitised data of all kinds. Data on the telecommunication facilities available in special libraries in Kerala are ascertained.

**Use of telephone and fax**

It is found that majority (80 per cent) of the libraries have telephone facility, but a very few (13.3 per cent) of them have both telephone and fax facilities. All the libraries of Central Government institutions, most (92.3 per cent) of the Central Government autonomous institutions and majority (57.1 per cent) of the State Government autonomous institutions have telephone facility. Telephone or fax facilities are not available in two libraries.

Most (90 per cent) of the libraries are part of the institute network or Intranet and about 47 per cent of the libraries have independent library network. Libraries of 87.5 per cent of the Central Government institutions, 84.6 per cent of the Central Government autonomous institutions and all the State Government and State Government autonomous institutions are part of the institute network or Intranet.

**Use of CD-Net/CD-ROM server/CD tower**

CD-Net/CD-ROM Server/CD Tower has several advantages, especially in a special library environment. This facility will be helpful to provide access to CD-ROM databases and other CD based information resources. Library users can access this facility through the intranet and they can access the same resources simultaneously. The analysis revealed that 76.9 per cent of the Central Government autonomous institutions and 50 per cent of the State Government institutions have CD-Net/CD-ROM Server/CD Tower.

**Use of Electronic Information Resources**

Electronic information resources are becoming increasingly important to libraries of all types and sizes. The explosive growth of Internet and widespread reliance of computer networks accelerated the use of electronic information resources to a great extent. The use of databases, electronic journals and other electronic information resources has increased significantly. The use of major electronic information resources in special libraries in Kerala is explained under the following subheadings.

**Online Public Access Catalogues**

OPAC is an excellent source of bibliographic information in libraries. It provides access to the documents of libraries through different modes of searching. The analysis of the data shows that majority (56.7 per cent) of the special libraries in Kerala have no OPAC, even though most of them are at various stages of computerisation. A few (33.3 per cent) libraries have good OPACs. Most of these libraries are attached to the Central Government autonomous institutions.
Database for information retrieval and the nature of information retrieved

Electronic databases are essential for providing efficient information services in special libraries. In recent years the demands for database services are increasing, since most of the latest information is available in online databases. Image databases and multimedia databases are also becoming predominant. Similarly, personnel reference databases and internal records enrich the knowledge of the users. Librarians were asked to indicate the types of databases and the nature of information retrieved, that is, bibliographic information or full text with choices ranging from commercial online databases to those containing internally generated records.

The analysis revealed that very few (20 per cent) special libraries are using commercial online databases, both bibliographic and full text. Most of these libraries are attached to the Central Government autonomous institutions. Nearly 57 per cent of the institutions are using CD-ROM databases. It is found that 25 per cent of the Central Government autonomous institutions and 14.3 per cent of the State Government autonomous institutions are using it for retrieving bibliographical information. A few libraries (28.6 per cent) of the state Government autonomous institutions, and Central Government autonomous institutions (23 per cent) are using it for retrieving both full text and bibliographical information. Very few libraries are using databases of internal records. One library of the State Government institution and two libraries of the State Government autonomous institutions are using databases for storing bibliographical information. One library of the Central Government autonomous institution and another library of the State Government autonomous institution are using databases for storing full text information.

Extent of end-user access to databases

The data was collected to identify the prevalence of access to electronic databases by end users of the service. Librarians were asked to indicate which database types could be accessed from within the library, and also whether access was available either via terminals situated elsewhere within the organisation premises or from offsite using telecommunication links.

The analysis shows that very few libraries are using commercial online databases and it is accessible both via terminals situated inside and outside the library. Three libraries are accessing commercial databases through terminals situated in the library and one library is providing access to databases through remote terminals. About 20 per cent of the libraries are accessing the CD-ROM databases through terminals situated in the library and a few (30 per cent) libraries are accessing the databases through remote terminals situated outside the library. About 38.5 per cent of the libraries of Central Government autonomous institutions and 50 per cent of the State Government institutions are accessing CD-ROM databases through terminals situated outside the library. A few (23 per cent) libraries of the Central Government autonomous institutions and State Government autonomous institutions (28.6 per cent) are accessing databases through terminals situated in the library.

Digital library

It is revealed that only two libraries have a separate digital library. It is also observed that the main components of these digital libraries include electronic databases, full text e-journals through Science Direct, Emerald, etc., publications of the institute research community, e-books, CD-ROM databases, discussion groups, online news, in house databases, publication databases, etc. A few (36.7 per cent) libraries have digital library initiatives and they are started creation and digitisation of some of their collections. But majority (56.7 per cent) of the special libraries in Kerala have no digital library or no digital library initiatives at all.

Library consortia

Only three special libraries in Kerala are participating in library consortia and this is for accessing electronic journals.

One of the library among the state government institutions is participating in INDEST consortia for accessing e-journals. Two libraries of the Central Government autonomous institutions are participating in CSIR eJournals Consortium.

Use of Internet

The Internet has become an indispensable resource for special libraries worldwide to enhance the collection, improve services and operations. Internet has made easy access to information sources/documents like books,
journals, electronic publications, etc. The Internet can be successfully utilised for providing reference service because various primary and secondary sources of information are available online. It is possible to access the resources of other libraries through the Internet. It is also possible to browse the entire collection of a library through WebOPAC and can make a request for a document through e-mail.

Librarians were asked to indicate the extent of their use of Internet in the library. All the institutions under study have the Internet connectivity in the library or information centre. Majority (63.3 per cent) of the special libraries in Kerala have leased line connection, and a few (36.7 per cent) libraries are accessing Internet through dial up connection. Though there are five Internet Service Providers in special libraries in Kerala, namely VSNL, NICNET, ASIANET, Sathyam and BSNL, the study revealed that majority of the special libraries in Kerala are accessing Internet through the VSNL.

A good number (43.3 per cent) of the libraries have only one computer node with Internet access and the Central Government autonomous institutions have more terminals with Internet access. Majority (56.7 per cent) of the libraries are using Internet Explorer as their Internet browser software and a few (23.3 per cent) libraries are using Netscape Navigator and Opera for browsing Internet. Majority (86.7 per cent) of the libraries have a website or at least a link in the home page of the parent institute. It is found that all the libraries of Central Government autonomous institutions and State Government institutions and majority of the Central Government (62.5 per cent) and State Government autonomous (86.7 per cent) institutions have website or link in the homepage of the parent institute. But it is observed that all these websites or links are not informative and these are not properly created. They do not provide any useful information.

Figure 3 shows that all the libraries of State Government institutions and majority (53.8 per cent) of the Central Government autonomous institutions and State Government autonomous institutions (57.1 per cent) are using Internet for SDI services. Majority (61.5 per cent) of the libraries of Central Government autonomous institutions are using Internet for acquisition work. All the libraries of State Government institutions and majority (57.1 per cent) of the State Government autonomous institutions are using Internet for current awareness service.
All the special libraries in Kerala are providing E-mail and World Wide Web facilities and majority of the libraries of Central Government autonomous institutions are providing FTF, Telnet, ListServe and Usenet/Newsgroups services. It is also found that libraries of Central Government autonomous institutions are considerably better in Internet based services or facilities than other categories of libraries.

Use of electronic/online journals

Majority (66.7 per cent) of the special libraries were found providing access to electronic journals. It is found that most (92.3 per cent) of the libraries of Central Government autonomous institutions and about half of the State Government institutions are providing electronic journals in their libraries.

Conclusion

Application of ICT in special libraries has become inevitable in the present era of information explosion and widespread use of digital information resources. Effective application of ICT in libraries helps in performing their operations and services most efficiently. In Kerala many special libraries have been applying ICT for providing efficient services and resources. This investigation has a summary of the current state-of-the-art information and communication technology infrastructure in special libraries in Kerala. Majority of the special libraries in Kerala have basic hardware facilities like servers, computers, printers, etc. However in the majority of the cases it was underutilised. The libraries of Central Government autonomous institutions have better hardware facilities including scanner, barcode printer, barcode scanner, Net Server, CD-ROM Tower, CD-Writer, etc. The study concludes that most of the special libraries in Kerala need proper ICT infrastructure including hardware, software and library staff have to be trained properly to make use of the resources optimally.

References

QUESTIONNAIRE

A. General Information
Please indicate your responses with a ‘✓’ (tick mark) or write in the spaces provided.

1. Name of the Institution:

2. Please indicate the type of your Institution/Organisation: State Government ☐/ Central Govt☐
   Semi Govt☐ / Autonomous (Central Govt.)☐ / Autonomous (State Govt.)☐ / Public Sector☐
   Private Sector ☐ / Others (Please specify):

3. Name of the Library/Information Centre:

4. Address:
   Telephone: E-mail :
   Fax: URL :

5. Name of the Librarian/ Person-in-charge of the Library :

B. Information and Communication Technology Infrastructure

I. Hardware (Please give the following details of the hardware)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Nomenclature</th>
<th>Make</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Server</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Clients/ Computer Workstations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Dot Matrix Printer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ink Jet Printer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Laser Printer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Barcode Printer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Scanner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Barcode Scanner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>CD-Net Server</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CD-ROM Tower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Systems with DVDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Back up Device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>LCD Projector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>CD-Writer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>UPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Others (Please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II. Software (Please give the following details of the software)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Nomenclature</th>
<th>Product Name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Network Operating System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Library Management Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Digital Library Software</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
III. Please indicate the type of databases you use for information retrieval, and the nature of information retrieved: (Please tick as appropriate)

<table>
<thead>
<tr>
<th>Database Type</th>
<th>Search Software Products Used</th>
<th>Used To Retrieve Bibliographical Information?</th>
<th>Full Text?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Online Database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD-ROM Database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Records</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IV. Please indicate the extent of end-user access to available electronic databases (Please tick as appropriate)

<table>
<thead>
<tr>
<th>Database Type</th>
<th>Is end-user access permitted via terminals</th>
<th>via terminals situated in the library?</th>
<th>situated outside of the library?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Online Database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD-ROM Database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Records</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

V. Do you have a Digital Library? Yes □ / No □

C. Telecommunication and Networking

1. Do you have the following telecommunication facilities? Telephone □ / Fax □
2. Whether your library has an independent Library Network? Yes □ / No □
3. Whether your library is part of Institute Network? Yes □ / No □
4. What is the type of network? LAN □ / MAN □ / Intranet □ / Extranet □ / WAN □ / Wireless □
5. Does your library network include a CD-Net/CD-ROM Server/CDTower? Yes □ / No □
6. Is your library participating in any library consortium? Yes □ / No □
   If yes, what is the name of the consortium?
   Please specify the main activities of the consortium:

D. Internet

1. Do you have Internet connectivity in the library or information centre? Yes □ / No □
   If yes, Name of the Internet Service Provider(s) (ISP)
   a. ERNET □
   b. VSNL □
1. Information and Communication Technology infrastructure:
c. NICNET

d. ASIANET

e. Satyam

f. BSNL

g. Others (please specify):

2. Type of Internet connection? Leased line□/Ordinary Dial up□/ ISDN Dial up□
VSAT□/Others (Please specify):

3. Is this Internet facility available over the network of your library? Yes□/No□

If yes, how many nodes are configured with Internet access facility: _____Nos.

4. Internet browsers available in the library
   a. Netscape □
   b. Internet Explorer □
   c. Mosaic □
   d. Lynx □
   e. Opera □
   f. Neo Planet □
   g. Others (Please specify):

5. Do you have a separate web site or a link in the web site of your Institute? Yes□/No□
   If yes, what constitutes the web site?
   a. Library profile □
   b. Web OPAC □
   c. Online databases □
   d. Audio/Video □
   e. Others (Please specify)

6. Do you use Internet for following library operations and services? (Please tick):
   a. Acquisition □
   b. Cataloguing □
   c. Classification □
   d. Bibliographic databases □
   e. SDI □
   f. CAS □
   g. Others (Please specify)

7. Internet services provided: (Please tick marks the appropriate box (es)):
   a. E-mail □
   b. FTP □
   c. Telnet □
   d. List Serve □
   e. Usenet/Newsgroups □
   f. WWW □
   g. Others (Please specify):

E. Do you have any comments or suggestions you wish to make about any state-of-the-art Information
and Communication Technology Infrastructure in your library or information centre?
Appendix B

LIST OF SPECIAL LIBRARIES

1. Central Institute of Fisheries Technology (CIFT), Cochin
2. Central Marine Fisheries Research Institute (CMFRI), Cochin
3. Central Plantation Crops Research Institute (CPCRI), Kasaragod
4. Central Tuber Crops Research Institute (CTCRI), Trivandrum
5. Centre For Development Studies (CDS), Trivandrum
6. Coconut Development Board (CDB), Cochin
7. DOEACC Center, Calicut
8. Electronic Research and Development Centre (ER& DC), Trivandrum
9. Fact Engineering and Design Organisation (FEDO), Cochin
10. Fluid Control Research Institute (FCRI), Palakkad
11. Indian Cardamom Research Institute (ICRI), Myladumpara
12. Indian Institute of Information Technology and Management Kerala (IIITMK), Trivandrum
13. Indian Institute of Spices Research (IISR), Calicut
14. Kerala Forest Research Institute (KFRI), Trichur
15. Kerala Industrial Training and Consultancy Organisation (KITCO), Cochin
16. Kerala Institute of Local Administration (KILA), Thrissur
17. Kerala State Planning Board (KSPB) Trivandrum
18. Kochin Refinaries, Cochin
19. Liquid Propulsion Systems Center (LPSC) Valiamala, Trivandrum
20. Marine Products Exports Development Authority (MPEDA) Cochin
22. Regional Cancer Centre (RCC) Trivandrum
23. Regional Research Laboratory (RRL) Trivandrum
24. Rubber Research Institute of India (RRII) Kottayam
25. Spices Board, Cochin
26. Sree Chithira Tirunal Institute for Medical Sciences and Technology, (BMT Wing), Trivandrum
27. Sree Chithira Tirunal Institute For Medical Sciences And Technology, (Hospital Wing), Trivandrum
28. Technopark Library, Trivandrum
29. Tropical Botanical Garden and Research Institute (TBGRI), Trivandrum
30. Vikram Sarabhai Space Centre (VSSC), Trivandrum