

Library Automation in Sri Lanka: an overview

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ABSTRACT

This paper is based on a survey of automation activities of libraries conducted in December 2002 and aims to examine the development of library automation in Sri Lanka and its present status. Further, it discusses the historical developments in the IT usage in libraries. It also discusses the utilization of software in the automation of libraries, different software packages used in library automation and the extent of their use in library operations.

KEYWORDS: Library automation; Library software; CDS/ISIS

1. HISTORICAL DEVELOPMENT

The computer age began in Sri Lanka in 1967, with the installation of the first computer by International Computers Limited at the State Engineering Corporation and by International Business Machines (IBM) at the Petroleum Corporation. However, the computer growth was very slow over the next 11 years. According to a study conducted in 1981, at the end of 1978 there were less than 20 computer installations in Sri Lanka. There was an increase in the number of computer installations in the country between 1978 and 1982. By the end of 1982, there were about 180 computer installations in the country of which 100 were microcomputers. This is a significant increase from 1978 when there were no microcomputers in Sri Lanka.[1]

The purchase of a minicomputer for the Sri Lanka Scientific and Technical Information Centre (SLSTIC) which is a division of the National Science Foundation (NSF) (formerly Natural Resources, Energy and Science Authority - NARESA) of Sri Lanka in 1983 was the first computer installed for bibliographic data processing in Sri Lanka. As the decision makers had little knowledge of library automation and were reluctant to recognize that computers could be used to improve library activities, the decision making process of acquiring this computer had taken nearly 3 years. In October 1981, the UNISIST Committee recommended purchasing a WANG MVP 2200 minicomputer with 64KB memory and 10 MB storage. The computer which was installed at SLSTIC in December 1982,

was first operated in January 1983.[2] This can be considered as a historical event because this was the first computer installed in a library in Sri Lanka.

Compilation of a computerized union catalogue was the first project initiated by SLSTIC. By computerizing its activities, SLSTIC intended to strengthen its capabilities and thereby to improve its performance. In addition to this, it also aimed to promote the exploitation of modern information technology by libraries in Sri Lanka. [3] However, the SLSTIC have not succeeded in achieving its second objective even today after 20 years because the majority of libraries only paid attention to automating their cataloguing function and maintaining bibliographic databases and did not pay attention to automating other complicated functions. As a result, librarians have failed to exploit the advantages of library automation and to extend its benefits to the end-user. [4]

As SLSTIC was the first organisation engaged in bibliographic data processing in Sri Lanka it had to encounter a number of great difficulties of which following could be considered as major issues: [5]

1. Non-availability of library software compatible with the SLSTIC's computer. Even though the software package MINISIS developed by the International Development Research Centre (IDRC) was readily available for SLSTIC, they could not make use of this offer because MINISIS needed special hardware.
2. Lack of staff knowledgeable in bibliographic data processing. As the human resources with adequate knowledge of information handling in addition to electronic data processing was not available, SLSTIC had to train its own staff.
3. Limitations of the minicomputer that was acquired by SLSTIC. It had only a BASIC compiler and 5MB storage for an integrated file. Due to inadequate storage for a bibliographic database, record length had to be limited and data was packed into common fields.

As the SLSTIC staff had designed the systems for the creation and maintenance of local databases before the purchase of the computer, basic programmes for data entry and searching were completed by mid 1983. However, the databases were created with the intention of using them to obtain bibliographic products rather than for online retrieval. Therefore emphasis was on print programmes. At the end of 1983, SLSTIC was able to obtain camera-ready copies of library bulletins for offset printing.

2. IMPACT OF CDS/ISIS ON LIBRARY AUTOMATION

As mentioned in the above non-availability of suitable library software could be considered as one of the major reasons for the slow growth of computerized library systems. Librarians had to depend on systems designers who were using general-purpose software which were not suitable for bibliographic data processing.[6] The introduction of CDS/ISIS (Computerized Documentation System/Integrated Set of Information Systems) software by UNESCO in 1986 and the designation of SLSTIC as the national distributor for the software in 1987 changed the scenario.

The introduction of CDS/ISIS in 1986 had an enormous impact on library automation in Sri Lanka. A microcomputer was made available to SLSTIC by UNESCO for ISIS work. SLSTIC organized a workshop in November 1986 for 10 librarians selected from the scientific libraries. Librarians were given a basic training in using the package. Also, a seminar was held at NSF on microcomputer software packages. Surveys conducted in 1989 and 1992 revealed that there had been a rapid progress in computerizing library activities mainly after the introduction of CDS/ISIS. According to the results of the survey which was carried out by SLSTIC in 1989, the number of computer installations had increased from 10 to 40 within three years after 1987. Out of these 40 libraries, only 3 libraries used non-ISIS software. This clearly demonstrates that there was a great impact on library automation after introducing ISIS.

UNESCO continuously improved ISIS and the version 2.3 was officially released in 1989. The shortcomings in the first version were removed in version 2.3 and many advanced features were added. Version 3.0 was issued in 1992 and that supported the LAN system. The further improved 3.07 version was released in 1993. The Windows version of ISIS named WINISIS (version 1.3) was officially released in 1998.

3. PROGRESS OF AUTOMATION ACTIVITIES IN LIBRARIES

The introduction of a computer to SLSTIC influenced and encouraged many libraries. Librarians regularly visited the SLSTIC to discuss matters relating to computerization of library activities. Librarians were able to witness the computer systems in operation and the students of library science were offered demonstrations.

The MARGA Institute, a private multidisciplinary research organisation acquired a computer for its network in 1986. The Committee on Studies for Cooperation on Development in South Asia needed an information databank and a network to facilitate the free flow of information among its participating institutions.[7] With the financial assistance of the International Development Research Centre (IDRC), the Development Information Network for South Asia (DEVINSA) was launched in 1986 at the Marga Institute. The Marga Institute also was also the coordinating centre for the network. INMAGIC 7.0 software was used to start the master database for DEVINSA, but in 1990 with 8000 records the database was converted to Mini-micro CDS/ISIS version 2.3.

The International Irrigation Management Institute (IIMI) currently known as International Water Management Institute (IWMI), which is a non-governmental institution, established a fully automated database in 1986. IIMI also, used INMAGIC to build up the Irrigation Management Information Network (IMIN). However, since 1991, except for the cataloguing, IIMI uses CDS/ISIS to automate all other library activities such as circulation, serials control, acquisitions, provide CAS, SDI services and to produce administrative reports.

The Ceylon Institute of Scientific and Industrial Research (CISIR) presently known as the Industrial Technology Institute (ITI) which is a statutory body began to computerize its library operations in 1986 with a small microcomputer with 256K memory and a 10Mb Winchester. At the beginning they automated their circulation system using a database package known as PCDB. However, there were certain shortcomings with this system mainly due to hardware problems such as insufficient storage capacity. Subsequently ITI installed a UNISYS minicomputer with 300 KB hard disk with two terminals in 1988 which made it possible for them to overcome some of the shortcomings faced by the previous system. This was a customized integrated library system designed using Informix 4GL standard engine database and included most library operations. However, it was not possible to answer queries about the library stock because the catalogue was not automated. But as bibliographic records were entered when issuing books, it was later possible to build up a catalogue. With the addition of another terminal a complete online circulation system was operated at the ITI in 1990. It is noteworthy to state here that this was the only library which had a fully automated circulation system until very recently in Sri Lanka.

This mini system was in operation until 1996 and when the operating system became outdated, the package was converted to run on an eight-user LAN, using a SCO UNIX platform. This was the first customized library system operated in Sri Lanka and it continued its operations until 1999. The ITI had to find alternatives when the Y2K problem arose in 2000 and Messars. Informatics (Pvt.) Ltd. designed a total integrated system for library operations. With the new system ITI was able to automate their library operations from the ordering to the final retrieval stage. Although the ITI library does not use ISIS for its operational systems, they use ISIS to develop small databases. [8]

The Sri Lanka National Library and Documentation Services Board (NLDSB) started its automation by computerizing the ISBN directory in 1989 using CDS/ISIS. In 1996, NLDSB started computerizing its union catalogue. The NLDSB also started using WINISIS with the establishment of the Devolution of Power and Ethnic Conflict (DEPEC) database. They used MS Access to create a Conference Index database.

The library of the Open University of Sri Lanka (OU), one of the libraries that has successfully automated their library functions,

started its automation by computerizing its catalogue in 1991 with ISIS. In 1993, the OU computerized its circulation system and in 1995 computerized acquisitions with Dbase. They started to use WINISIS in 1999.

4. DEVELOPMENT OF INTEGRATED INFORMATION SYSTEMS

Non-availability of suitable and inexpensive software has been identified as the major constraint to library automation in Sri Lanka. With the intention of overcoming this barrier, AGRINET developed an integrated library system in 1997. The aim of this system was to provide a low cost, integrated system for automating library functions in small and medium size libraries. As all participating libraries used ISIS and most library personnel had basic training in ISIS, AGRINET decided to use ISIS for the development of this integrated system.[9] There are only two integrated systems locally produced; one used at ITI developed using Oracle and CDS/ISIS based ILS, the 'PURNA'. PURNA DOS version was first distributed to 42 libraries through SLSTIC. Now it has been upgraded using Win ISIS. PURNA has 6 modules: acquisition, cataloguing, circulation, serial management, current awareness, OPAC. A simplified version for school libraries "Taksila" has been developed using Win ISIS and is in the process of distribution. Presently one school library is using it.

PURNA also maintains a Union Catalogue (P-cat) by merging monograph records of the PURNA Backup database. P-Cat is hosted by the National Science Foundation (NSF). P-Cat is the first Sri Lankan Union Catalogue on the Internet. (<http://www.nsf.ac.lk/purna/news.html>)

5. USAGE OF OTHER LIBRARY SOFTWARE

Apart from ISIS, there are other software packages that are used by a few libraries in Sri Lanka. The Save the Children Fund library uses Cardbox and Papermaster software packages which were provided by their parent organization based in London. The Library of USAID used a software package called Microdis (Micro computer based Development Information System) to automate their library activities. Microdis is an integrated library software package developed by the Centre for Development Information and Evaluation of the USAID/Washington. This was developed to assist USAID Mission Information Centres in managing and accessing their development information resources. [10]

The British Council has automated its circulation system since 1997 using a commercially available integrated library software package named Libsys which was developed in India.

The Library of the Central Bank of Sri Lanka used ISIS to develop its databases until its destruction in 1996. Thereafter, since 2000 they have started to use Libsys for their automation.

The Sri Lanka National Library and Documentation Services Board (NLDSB) and the Chartered Institute of Management Accounts (CIMA) of Sri Lanka had switched from ISIS to another software package Alice for Windows.

The universities of Kelaniya, Colombo, Sri Jayewardenapura, Open University, Peradeniya and Moratuwa had recently switched from ISIS to other software packages respectively LibSuit, Alice for Windows and Libsys.

It is important to note here that some libraries are in the process of migrating to more user-friendly, integrated, tailor-made integrated library automation systems.

6. SOFTWARE USAGE IN LIBRARIES

Majority of libraries in Sri Lanka use CDS/ISIS or WinISIS for the automation of library activities. According to the statistics on distribution of CDS/ISIS, at the Sri Lanka Scientific & Technical Information Centre of National Science Foundation (SLSTIC/ NSF), 209 libraries have obtained CDS/ISIS while 310 libraries have obtained WinISIS. Most of the libraries have only used this for cataloguing. As mentioned above, recently some university libraries, special libraries and the National Library have acquired commercial software. Usage of different software packages is given below:

Software	No. of Libraries
LIBSYS	03
Alice for Windows	05
Inmagic	01
Infomix	01
CDS/ISIS & WINISIS	All other libraries

Table 1

The use of software for different functions in libraries are given below:

	PURNA	LIBSYS	ALIC F WIN	LIB SUIT	INFOMIX	INMAGIC
Acquisition	03	02	02	-	01	-
Cataloguing	55	03	05	01	01	01
Circulation	15	03	02	-	01	-
Serials	09	02	01	-	01	-
OPAC	06	-	04	-	-	01
(Intranet & Internet)						
CAS	01	-	-	-	-	-

Table 2

This information clearly indicates that the libraries are still using IT for developing their catalogues and databases, which are the basic functions of any information center. They have not been able to make use of new developments in IT for the benefit of their users.

7. OTHER IT RELATED ACTIVITIES IN LIBRARIES

In Sri Lanka Special libraries are engaged in IT based activities more actively. There are four library networks operating in the field of science & technology, namely; Sri Lanka Scientific & Technical Information Network (SLSTINET) (<http://www.nsf.ac.lk/slstic/slsnet.htm>) coordinated by SLSTIC, Agricultural information network (AGRINET) coordinated by CARP, Environmental Library Network (ENLINET) coordinated by CEA and Health Science Literature, Library & Information Network (HELLIS) coordinated by University of Colombo, Medical Faculty Library. Almost all the members of AGRINET, ENLINET & HELLIS are members of SLSTINET of which the membership is about 107. These libraries can be categorized as follows:

Type of library	Number
Special	68

Government	07
Academic	28
National	01
Public	03

Table 3

Development Information Network for South Asia (DEVINSA), coordinated by MARGA Institute and the Cultural Information Network for South Asia (CINSA), coordinated by the Cultural Triangle, are two other networks which are not active presently.

According to information collected recently by SLSTIC, among the SLSTINET member libraries, computers are used for some sort of activities in the library, such as cataloguing, e-mail and Internet etc. The different types of activities for which the computers are being used in different types of libraries are summarized below:

Activities	Special	Academic	National	Government
Cataloguing	37	19	1	6
Circulation	16	2	-	1
Internet	32	4	1	1
CD Rom	24	12	1	4
E-mail	39	19	1	4

Table 4

Eleven (11) libraries have obtained dedicated leased lines for accessing Internet, while twenty six (26) are accessing through dial up connections. Thirteen libraries (13) have local area networks through which their catalogues can be accessed, ten (10) libraries have their catalogues online on Internet.

8. INTERNET/ WEB BASED ACTIVITIES

There are very few libraries engaged in Web based activities in Sri Lanka.[11] Sri Lanka Scientific & Technical Information Centre (SLSTIC - <http://www.nsf.ac.lk/slstic/slstic.htm>) is the only Information center responsible for developing the website of its parent organisation National Science Foundation (<http://www.nsf.ac.lk>). All the other library websites are maintained by the parent organization. Presently SLSTIC is responsible for all the web-based activities of its parent organization. SLSTIC is the first Information centre to provide online access to databases (<http://www.nsf.ac.lk/vidya/vidya.htm>). SLSTIC use different interfaces such as Websis and GenISIS for its online databases using Linux as well as Win NT operating systems. The databases are developed using CDS/ISIS Window version. A workshop was conducted in 2002 by Sri Lanka Library Association and held at the National Science Foundation. The main objective of the workshop was to promote web interface GenISIS for CDS/ISIS database. The interface was developed by UNESCO and is being used by a few libraries for their online public access catalogues (OPAC). To promote usage of IT in libraries, SLSTIC also host databases of other libraries such as:

- Union catalogue of PURNA users (<http://thakshana.nsf.ac.lk/wwwisis/purna/form.htm>)
- Sri Lanka Standards Institute (<http://www.nsf.ac.lk/slsi/sls.htm>)
- The World Conservation Union IUCN (<http://thakshana.nsf.ac.lk/wwwisis/iucn/form.htm>)
- International Labour organization-Colombo Office

(<http://thakshana.nsf.ac.lk/wwwisis/ilo/form.htm>)

- The Institute of Chartered Accountants of Sri Lanka <http://www.icasrilanka.com>

In addition, there are four Universities and some other information centers having OPACs:

- University of Moratuwa (<http://www.mrt.ac.lk/lib/>)
- University of Peradeniya (<http://www.pdn.ac.lk>)
- University of Ruhuna (<http://www.lib.ruh.ac.lk/Lib/opac.htm>)
- Open University (<http://192.248.73.156/Scripts/AfwiInq.dll>)
- National Library & documentation Services Board (<http://www.natlib.lk/search/search.htm>)
- Institute of Policy Studies (<http://www.ips.lk/library/catalog/index.html>)
- Sri Lanka Standards Institute (<http://www.nsf.ac.lk/slsi/sls.htm>)

In addition, to SLSLTIC other libraries which highly utilizes IT for their activities are:

- University of Moratuwa (<http://www.lib.mrt.ac.lk/>)
- Industrial Technology Institute (<http://www.iti.lk>)
- Institute of Policy Studies (<http://www.ips.lk>)
- International Water Management Institute

(<http://www.cgiar.org/iwmi/srilanka/srilanka.htm>)

9. ACCESS TO ON LINE DATABASES

From early 2002, research institutes, libraries and other not-for-profit organisations within Sri Lanka were able to access many online databases. This service was provided through Programme for the Enhancement of Research Information (PERI) of INASP. This covers access to following full text databases:

- Blackwell's Online Journals Database *Synergy and Ingenta*
- EBSCO 7 databases of information which can be searched individually (more than 7300 journals)
- The Cochrane Library

Also a document delivery service, through British Library Document Supply Centre (BLDSC), is available freely. These services are being used to enhance research activities in the country, especially in the field of Science and Technology (S & T).

10. THE LANKA EDUCATIONAL ACADEMIC AND RESEARCH NETWORK

(LEARN) (<http://www.ac.lk/>)

LEARN is the academic computer network in Sri Lanka, which interconnects Universities and Research Institutes.[12]

The LEARN project commenced in 1990. The first service provided was LEARN mail, the first e-mail service in Sri Lanka. In 1995 University of Colombo, University of Moratuwa and Open University was connected to Internet via 64Kbps-leased lines while in 1996 NSF was connected. Presently seven Universities and the National Science Foundation are connected to Internet via 2Mbps links. LEARN Services provided to all members are:

Ø Consultancy

- Network Design
- Server Set up

Ø Help Desk

- Network-related problem
- Site visits if needed

Ø Assistance with obtaining Internet connection

- Specifications
- Tender evaluation

In the near future, LEARN will be instituted as a Centre for Higher Learning under the Universities Act and will be attached to the University Grants Commission.

10. CONCLUSIONS

Sri Lankan Libraries and Information Centres face many problems in the application of IT.

Lack of Funds: In the public sector, the library gets a very low priority and the library is not identified as an important part of the main body when allocating funds. This has become a barrier in using IT for the library services.

Lack of Competent Staff to Handle IT: There is a notable lack of expertise available especially in Developing Countries. This lack of advice and support could cause inappropriate systems to be selected and could cause the users of new technology to fail to exploit its potential to the full. In the field of Information Science there is a need for multidisciplinary expertise to combine IT with Information Science.

Lack of Training Facilities: In Sri Lanka, presently, only the Sri Lanka Library Association offers a Course on Library Automation. In addition SLSTIC offers basic training on CDS/ISIS. SLSTIC also organise workshops and seminars on information retrieval through Internet and CD ROMs and on application of IT at different levels. There is a need for development of new courses for training library system developers. It is also important that Librarians change their attitudes and restructure the traditional services to suit the developing techniques in other disciplines.

Lack of an Automation Policy: The use of IT in information processing is now a routine and integral part of libraries & information centres in the world. It is essential that the research and academic community of Sri Lanka be given ready access to information if they are to achieve the full extent of their potential contribution to the development of the country. There is no organisation in Sri Lanka, which holds the responsibility in the development of a national policy on Library Automation and to coordinate the activities.

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