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The status of library automation in special libraries of Sri Lanka: The first sixteen years

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ABSTRACT

Library automation is a significant mechanism for enhancing the efficiency and effectiveness of the library operations. It plays a pivotal role for the functioning of library housekeeping operations such as acquisition, cataloguing, acquisition and serials control. The aim of the study was to investigate the status of library automation in special libraries in Sri Lanka up to the year 2009. The population of the study consisted of seventy six (76) special libraries. Random sampling method was used to select 50% of the population, resulting in thirty eight (38) libraries as the sample. A questionnaire was administered to the selected sample. It was found out that 57.14% of the special libraries have automated their library operations and services. Cataloguing was the highly automated operation and Web OPAC was the prominent automated library service in these libraries. In consideration to the use of operating system, Pentium IV and Windows XP were most popularly used. Special libraries in Sri Lanka were rarely experiencing the Core 2 Duo or Dual Core computer types and Windows Vista, Windows7, LINUX or UNIX operating systems. A total of 57.14% of the special libraries were using library management software. Of this usage, 50% of the special libraries were using WINISIS software package. Accordingly, special libraries were gradually moving towards using an integrated library systems. Insufficient funds, administrative policies and regulations, inadequate proper training programs and lack of proper plan were the most prevailing obstacles in the full automation of special libraries. Provision of sufficient fund allocations and infrastructure facilities, trained skilled manpower with high quality in-house and professional training, as well as provision of adequate awareness for administrators need to increase in order to cope with the library automation in the near future.

Keywords: Library; Special Libraries; Library Automation; Sri Lanka

INTRODUCTION

The different types of libraries such as national, university, school, public, special, and government are currently functioning in Sri Lanka. As information service organizations, the aim of these libraries is to collect, store, organize and make available information sources to their users. Today, in a dominant era of Information and Communication Technology (ICT), libraries are keen to the computerization of the functional requirement and library house-keeping operations such as acquisition, cataloguing,

circulation and serials control. As a result, library automation is playing a prominent role to promote library operations in efficient and effective manner. Special libraries in Sri Lanka are playing important role in this context. A library established, supported, and administered by a business organizations, private corporations, professional associations and government agencies to meet the needs of its members or staff in pursuing the goals of the organization is named as Special Library (IFLA Multilingual Glossary for Art Librarians 1996).

The term library automation in the past is referred to the mechanization of the traditional library operations such as acquisition, serials control, cataloguing and circulation (Sonker and Jayakanth 2003). But today, it is being used to refer to computerization of not only traditional library activities but also those related activities as information organization, storage, retrieval and usage.

Library automation had been taking its first steps in America and Europe during 1940s; and its influence entered the scientific community in Sri Lanka too (Seneviratne 2013). As a result, the first mainframe computers were installed at the State Engineering Corporation and at the Ceylon Petroleum Corporation in 1967 (Smyth, Sittampalam and James 1982). Considering the history of library automation in special libraries, the Coconut Research Institute library was the first to adopt a mechanized system for its information analysis, store and retrieval using optical Coincidence Cards or Peek-a-Boo system' (Seneviratne 2013).

The first mini-computer named WANG MVP 2200 with 64KB memory and 10MB was installed for the first time in 1982, in the Sri Lanka Library and Information Science sector, at the Sri Lanka Science and Technical Information Centre (SLSTIC) of the Natural Resources, Energy and Science Authority (NARESA), presently known as National Science Foundation (NSF) (Yapa 1987; Talagala and Gamage 2002). Bibliographic data processing started in 1983. SLSTIC had to encounter a number of difficulties in bibliographic data processing after purchasing of the computer systems. The non-availability of library software, lack of skilled manpower, limitations of the acquired computer were identified as the major obstacles. However, SLSTIC was able to create UNICAST database and trained its staff in order to overcome the said obstacles.

In 1996, CDS/ISIS (Computerized Documentation System / Integrated Set of Information System) software was introduced by UNESCO, and in the subsequent year, SLSTIC became the national distributor for the text-retrieval software. Subsequently, ten librarians who worked in the scientific libraries were selected for the first training sessions on CDS/ISIS. Many libraries were able to obtain computers and software to develop automated library systems. MARGA (a private multidisciplinary research organization), International Irrigation Management Institute (IIMI) currently known as International Water Management Institute (IWMI), and the Ceylon Institute of Scientific and Industrial Research (CISIR) presently known as the Industrial Technology Institute (ITI) were among the special libraries that developed their in-house systems (Talagala and Gamage 2002).

Special libraries are pioneers of library automation in Sri Lanka, and this paper reports on their advances in library automation for the period 1983 to 2009, i.e. in their first sixteen years of development. Further studies will be carried out to find out the library

automation change and progress during the years 2010 to 2014. There has been no proper documentation or study regarding the library automation in Sri Lanka until 2009. Hettiarachchi (2001) and Sanjeewani (2012) on their comparative ICT studies reported the existence of little information about special library automation. Therefore in this study, we consider, is very important to find out the historical flow of special library automation of Sri Lanka.

A BRIEF LITERATURE REVIEW OF LIBRARY AUTOMATION IN SRI LANKA

In the absence of key studies carried on library automation in Sri Lanka, limited core researches have been identified. There has been no big differences identified in the period of 2001-2009 in the context of automating library operations in special libraries (Sanjeewani 2012 and Hettiarachchi 2001). However, it should be mentioned that over 50% of special libraries were using computers to automate their library operations and services in Special Libraries of Sri Lanka (Sanjeewani 2012 and Hettiarachchi 2001).

In considering the automated library operations, cataloguing was the highly automated library function in the special libraries (Sanjeewani 2012, Rathnabahu 2009, Wijayasundara 2005, Gamage 2002 and Hettiarachchi 2001). Among them, cataloguing books written in English was the most popular operation (Sanjeewani 2012 and Hettiarachchi 2001) while the Web OPAC appeared to be the most automated user service in the special libraries (Sanjeewani 2012). It was found later that special libraries automated their user services more than their library operations (Hettiarachchi 2001). Further, it was revealed that the library services such as Current Awareness Services (CAS), Selective Dissemination of Information (SDI), and Inter Library Loan (ILL) were automated more than special library operations such as cataloguing, circulations and acquisitions (Sanjeewani 2012). The highest available facility was browsing of CD-ROM in special libraries (Wijayasundara 1997).

CDS/ISIS, WINISIS, PURNA, INMAGIG, ORACLE, DBASE, LIBSYS and MS Word (for ILL, CDS/ISIS, and Reporting) were commonly used as the library automated software in special libraries (Hettiarachchi 2001). Apart from that, the Automated Online Library System (AOLS) was also used for library automation (Sanjeewani 2012). Technological, managerial, infrastructure, human, political and social factors were identified as crucial problems in library automation (Wijayasundara 2005).

RESEARCH DESIGN

There are seventy six (76) special libraries in the whole of Sri Lanka, according to the Statistics of Sri Lanka National Library (1994). Random sampling method was used to select 50% of the population, resulting in thirty eight (38) libraries as the sample. The study employed survey method using questionnaire as the data collection technique. Questionnaires were sent to the 38 special libraries via the post. Only 28 (74%) libraries responded to the questionnaires. Qualitative data were converted into quantitative data using a fixed value for each question numbered, and the MS-Excel spreadsheet application was used to analyze the collected data.

RESULTS

Key findings of the study are described under participation in training, availability of computers, operating systems, digital equipment, library automation status, automation of library functions and user services. Library software availability and problems pertaining to the library automation are discussed below.

Participation in Library Automation Training

A total of 71% of the special library staff have participated in local or international library automation workshops and training programs. The results revealed that the majority of the staff were participating in the continuous professional developments in order to acquire new knowledge and to gain practical experiences of library automation.

Availability of Computers

Table 1 shows the availability of different types of computers in special libraries of Sri Lanka. Results revealed that the majority of the special libraries (52%) were using Pentium IV computers compared to other system types. Twenty-five percent of special libraries were using Pentium I/II/III. Further, Table 1 shows that 396/486 types of computers were still in operation among 6% of the special libraries. Apart from that, about 7% of the special libraries were moving towards improvised versions like the Core2Duo or Dual Core computers. Further, 10% of the minimum percentage was using server computers in the libraries.

Table 1: Availability of Computers by Type

Types of Computers	Special Library (%)
396/486	06
Pentium I/II/III	25
Pentium IV	52
Core2Duo or Dual Core	07
Server	10

Availability of Operating Systems (OS)

Different types of Operating Systems (OS) were in use in the special libraries. Results indicated that the special libraries were still operating the DOS (3.57%), Windows 98 (3.57%), Windows 2003 Server version (14.24%) and Windows NT (3.57%) OS. Half of the respondents (50%) was using Windows XP OS. Special libraries were slightly managing with Windows Vista (7.14%) and Linux or UNIX (3.57%).

Availability of Digital Equipment

Taking into consideration the availability of digital equipment among the libraries, the majority of libraries had Compact Disk Players/ Writers (35.71%), Scanners (32.14%), DVD Players/ Writers (28%) and printers (25%).

Status of Library Automation

Figure 1 shows the status of library automation in special libraries of Sri Lanka. It shows that 57.14% of the special libraries automated their library housekeeping operations and

user services. Another 42.86% of the special libraries were still providing services to their users in the traditional way.

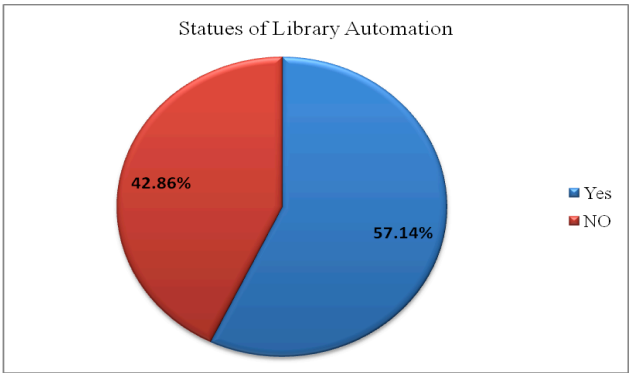

Figure 1: Status of Library Automation in Special Libraries

Automation of Library Functions

Of the total automated special libraries, 75% of the special libraries automated cataloguing of Sinhala books and 75% of English books, while 18.75% automated cataloguing of Tamil books. About 81.25% of the special libraries were not having any proper plan to automate cataloguing of Tamil books. Cataloguing was the key to the widely automated library function among the special libraries.

Subsequently, acquisition (43.75%) and serial control (43.75%) were the next functions of library automation, while 37.50% acquisition was staying in the planning stage. About 56.25% of the special libraries had no proper plan for serials control. Further, circulation function (31.25%) also was noticeably automated among the special Libraries. However, 56.25% of the special libraries did not have any plan to automate their circulation function. Table 2 details the findings.

Table 2: Automation of Library Functions

Library House-keeping Operations	Levels of Automation		
	Completed (%)	Planning Stage (%)	Has to be Planned (%)
Acquisition	43.75	37.50	18.75
Cataloguing-Sinhala Books	75.00	6.25	18.75
Cataloguing-English Books	75.00	6.25	18.75
Cataloguing-Tamil Books	18.75	-	81.25
Circulation	31.25	12.50	56.25
Serials Control	43.75	-	56.25

Automation of User Services

Table 3 shows the automation of user services in special libraries of Sri Lanka. With consideration of the automated library services, 50% of the special libraries automated and created Web Online Public Access Catalogue (Web OPAC) although 50% libraries were not planning to automate their Web OPAC. Apart from that, similar responses (43.75%) regarding services such as Current Awareness Services (CAS) / Selective Dissemination of Information (SDI) and Report Generating activities were automated. Small percentages of special libraries had automated budgeting (18.75%) and annual verification (18.75%) services. The results disclosed that as cataloguing was the highly automated operation, Web OPAC became the highly automated library service in special libraries.

Table 3: Automation of User Services

Services	Levels of Automation		
	Completed (%)	Planning Stage (%)	Has to be Planned (%)
Web OPAC	50.00	00	50
Inter Library Loan (ILL)	37.75	00	62.25
CAS/SDI Services	43.75	00	56.25
Report Generating	43.75	6.25	50.00
Budgeting	18.75	6.25	75.00
Annual Verifications	18.75	6.25	75.00

Automated Library Software

Figure 2 illustrates that the library automation software availability in the special libraries sampled. It shows that 57.14% of the special libraries were using library automation software.

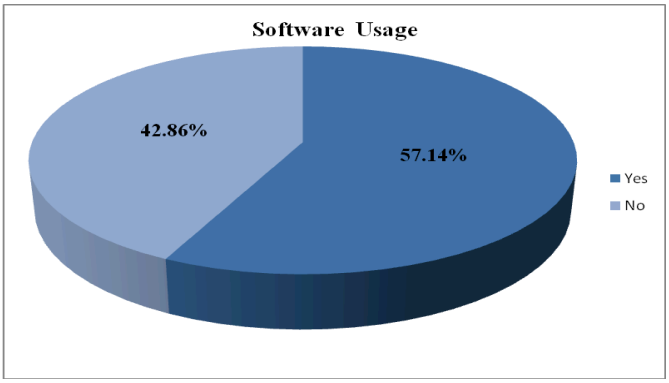

Figure 2: Usage of Library Software

On the usage of library software, the study indicated that 50% of the special libraries were using WINISIS package developed by the UNESCO for library automation. About 18.75% of the libraries were using PURNA. PURNA was developed by a Sri Lankan senior

Librarian named Mr. N.U.Yapa in 1997 who was the Chief Librarian of International Water Management Institute-IWIMI), and the systems is inter-related with WINISIS. About 12.5% and 6.25% of the special libraries were using Alice for Windows (AFW) and Libsys commercial software respectively. Further, results indicated that 12.5% of the special libraries were using Automated Online Library System (AOLS) package. AOLS was developed by the Sri Lanka Institute of Information Technology (SLIIT).

Use of Library Automated Software for Library Operations and User Services

On the usage of Libsys (6.25%) library software, the entire library operations were automated, except for circulations and annual verification. These small number of special libraries were able to automate its operations and services noticeably using Libsys.

On the usage of Alice for Widows (AfW) software (12.5%), the libraries were able to fully automated cataloguing of English books and Web OPAC. Serial Controls, Inter Library Loan (ILL) and Report Generating were partially automated using AfW.

On the usage of PURNA library software (18.75%), 67% cataloguing of Sinhala Books was automated.

WINISIS software was used to automate the overall library function in substantial percentage. Cataloguing of Sinhala (88%) and English (75%) were the highest automated library functions using WINISIS software.

AOSL software was used for automation of acquisition function completely. All operations were partially automated other than cataloguing of Tamil books and annual verification using this systems.

Obstacles of the Library Automation in Special Libraries

The following major obstacles were identified and discussed:

(a) Insufficient funds and parent organization delay in purchasing computers and other peripheral equipment

Insufficient funds allocated to the libraries for purchasing computers and peripheral equipment had been identified as obstacles by 62.50% of the respondents. Proper equipment are most important for library automation programme. According to the findings, 66.07% of special libraries were facing difficulties with the parent organization's rules, regulations and procedures. As a result, libraries should have to take longer times to purchase computers and other equipment. This issue was badly affecting the library automation process.

(b) Laws and regulations

Laws and regulations of purchasing and maintaining ICT tools in the parent organization were also considered as a crucial difficulty among 65.18% of the special libraries. The majority of the special librarians declared that libraries had to procure the lowest price for equipment due to rules and regulations of the parent organization. These computing facilities may cause many problems within a short period of time, due to their lowest

specifications. This was directly having a distraught impact on the library automation process.

(c) Inadequate proper training programs
A total of 65.18% of the special libraries were identified to have lack of proper training in ICT throughout the country. However about 71% of the special libraries staffs were participating in local or international library automation workshops. It seems special librarians were in need of more training programs related to library automation.

(d) No plans to use IT tools within the library operations
A total of 64.29% of the special libraries were not having proper plan to use IT tools within the libraries' working environment. As a result, librarians were not flexible to handle library automated equipment.

(e) Time consumption for repair of instruments
A considerable 65.18% of special libraries were suffering from time-consuming matter. Parent organization took a longer process to repair library equipment such as computers, scanners and other peripheral devices.

(f) Lack of database management systems to support Sinhala
Special libraries (40.18%) were lacking of national language (Sinhala) software and this is another major obstacle. Special libraries were still using transliterate system for data entry of Sinhala books into the library system. The systems did not support Sinhala or any other languages except for English. Special libraries were only using commercial and semi-commercial software other than the Open Source Software (OSS) such as KOHA.

CONCLUSION

The majority of staffs had participated in local or international level workshops and training programs in library automation. It appears that special library staffs were very enthusiastic and keen in acquiring new technological knowledge into the libraries. Only a small percentage (19.64%) of the special libraries reported that they did not have qualified staff. It appears that special libraries trained their library staff to face the new technologies.

Special Libraries were still using outdated technologies while awaiting to acquire modern technologies into the libraries. For example 396/486 types of computers were still in operation in the special libraries instead of Pentium IV and Core2Duo or Dual Core computers. Further, Ms DOS OS was also functioning while Windows XP, Windows Vista and Linux or UNIX were also in use. Additionally, special libraries had their own small numbers of computer servers to their demands.

Taken into consideration of the library automated operations and services, cataloguing was the highly automated library function in the special libraries and the priority was given to the cataloguing of Sinhala and English books only. Only a small numbers of special libraries automated the cataloguing of Tamil language books. Acquisition and serial control were the next frequently automated library operations. Automation of

circulation function was also noticeable. In the context of automated library services, Web Online Public Access Catalogue (Web OPAC) was the highly automated special library services in Sri Lanka. Apart from that, Current Awareness Services (CAS)/ Selective Dissemination of Information (SDI) and report generating services were also highly automated.

The majority of the special libraries were using WINISIS package developed by the UNESCO for library automation. PURNA, AOSL, LIBSYS and Alice for Windows were significantly in usage.

In conclusion, Sri Lankan special libraries are marching towards modern library systems in order to match with the global scenario. The pace of the changing atmosphere in special libraries in the country however could not meet the present user demands. Hence, the automation of library operations should be given priority by the parent organizations. Major challenges in library automation has been elaborated in the study, and special libraries have to be given more attention in the implementation of integrated library management systems. It is paramount to shift on to a common library software package for all special libraries within a decade. In this situation, open source based library automated system is the most viable and cost-effective. Proper training of staff must be looked into and most suited strategic planning should be envisaged and developed in the special libraries of Sri Lanka. Sufficient funds should be allocated to the special libraries for its future library automation development.

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