

Library Automation and Open Source Solutions Major Shifts & Practices: A Comparative Case Study of Library Automation Systems in India.

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Abstract

Open source solutions have made their impact on areas of information knowledge and content management. Library automation system is one of the areas concerned to library community. It is a big challenge for the libraries when they select the automation product for their library, where one has to decide from various options available for the automation product such as commercial, non for profit and open source. The paper describes the observations and makes comparisons on the basis of discussion had with the library community using automation software in India. It also includes the information available in related literature. Features of library automation software, which are mostly in practice by libraries i.e. Libsys and SOUL, are compared with open source system KOHA.

Keywords: Library Automation, Open Source, SOUL, LibSys, KOHA

1. Introduction

Information Communication Technology (ICT) and Library Automation has given an important support to the libraries. By using this, libraries can fulfill the user's requirement effectively; authorities can make good decisions and plan their strategy. Library automation is first and a foremost thing comes under ICT application. It is very difficult to mention the beginning of the library automation, but it can be derived that use of computer started during 1970s and early 1980s when some of the libraries started using it for bibliographic records creation/processing. James J. Kopp [1] mentioned that the advent of information technology, WWW (World Wide Web), Internet and the need of sharing information/knowledge resources encouraged libraries to automate the functions. It will provide them total control on available resources and facilitates availability of document at other libraries. That is the reason why computerization of online database and their management become essential and important in libraries. Good and authentic data can help managers/librarians to make quick and appropriate decisions. Multiple tasks can be performed from one place or from various places together. Staff can not only see their own resources but also can see the availability of resources in other libraries too using union catalogue / virtual union catalogue/z39.50 protocol. Apart from this, library automation also enables many opportunities to improve, enhance services of libraries for their users [2].

Library management using computer requires hardware/ software and human ware. Authors have touched upon software part, which is more crucial compare to the hardware. All vendors or companies are offering almost similar hardware under different brands or names they all are priced. For selecting the hardware, librarians can invite companies for demonstration or have a survey of other libraries or the software, where they can make observation of the software being used with the hardware

configuration. Human-ware for computerization, automation requires orientation or training; existing manpower can be equipped with expertise. Many national agencies such as INFLIBNET, DELNET, DRTC, NISCAIR and universities are offering courses under their curriculum. Orientation programme/ refresher courses by UGC (University Grants Commission) through Academic Staff Colleges all across the country are also focusing in this direction. Selection of software is very crucial due to ambiguity and wide difference between the available options and creates confusion. Librarians decide as per the availability of skilled manpower for the available software such as commercial, freeware, open source.

2. Library Automation Software at Indian Libraries

In India based on survey conducted by Kushwah to study the libraries of Indian academia to know the use of library management software, total 57 libraries related to the academic, technical and R&D organizations were responded (Table-1) [3]. It was found that maximum libraries are using either SOUL or LibSys. There are other software too in use but the members are less than these two. There are lots of open source, shareware and freeware solutions are available for use, but only Micro CDS/ISIS a freeware promoted by UNESCO (United Nation Educational, Scientific and Cultural Organization) is in use by Indian libraries. Due to non-availability of core library automation feature in this software, libraries are in process of shifting to a fully featured library automation system. Now UNESCO has introduced WEBLIS a free-of-charge web based integrated library automation system based on CDS/ISIS. KOHA an open source library automation system is also doing well, many renowned libraries of other countries are using it. At the time of survey following was the status of the software being used in libraries shown in Table-1.

S.N.	Software	Number of Libraries Using
1	SOUL	14
2	Trodon	02
3	LibSYS	14
4	CDS/ISIS	08
5	ALICE	03
6	SLIM	01
7	Not Answered	15
	Total	57

Table-1 Library Management Software Used by Indian Insitutions [3]

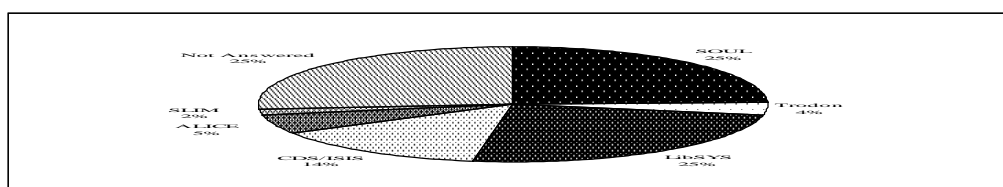


Chart - 1 % of Use of Library Management Software by Indian Institutions [3]

3. Problem

While surveying libraries, we had a discussion with library managers where they expressed problems in using Libsys, SOUL and other systems. These problems can be summarized as, high cost, new version or new feature, additions are charged heavily. 10% to 20 % cost of total price is charged as a maintenance cost especially by commercial vendors, some software have not introduced any new addition after its first version is released. Library community also expressed that, when library automation software vendor approaches libraries to sell their products, they commit like any thing, especially commercial product vendor in form of agreement but they do not believe in completion of their commitment. The fact was revealed by many library managers who are using commercial products for their library automation. Users of commercial products also said that after installation there is big problem of support, some of the libraries said we have not released some % of amount of the software cost due to this as a last solution SOUL a product of INFLIBNET developed for library automation, user said we are not getting new version/additional of new features from last long interval, some said we are requesting for some customization but that is not done by INFLIBNET. Other problem observed is migration of development team especially in case of SOUL. Almost all people who were involved in the development of SOUL are shifted from INFLIBNET to other places due to various reasons. Similar problem is with Libsys too, but being a private company Libsys could replace new team of developers in place of migrated persons. Libraries are in a difficult situation now, one side they are facing financial crunch and other side no support for existing Library Automation system by their vendor unless they pay for annual maintenance. Maeshall Breeding [4] have compared thousands of libraries using commercial automation systems. He mentioned that use of open source systems has not become a trend yet. Based on the discussion had with library community it was felt that libraries wanted to be free from the initial costs of the software and ongoing maintenance charge associated with them. Libraries need new features to be added and development should focus on integrating content beyond traditional MARC records by bringing in book jacket images, tables of contents, abstracts, reviews and full text, personalization and user centric retrieval, online book renewal, fine payments, interlibrary loan requests, integrated assistance through live chat, voice over IP, and video.

4. Solution

Based on observations, facts and published literature, authors found, open source or free ware as an alternate solution of the commercial software. It has been observed that best reason for adapting open source or migrating from commercial to open source is that library may have complete control over the system. Open source provides the freedom to try boldly imaginative innovations in library service [5]. Open source software is good for the libraries of developing countries facing problem of lack of budget, but having vision to modernise the library, organize, manage and disseminate information resources [6]. Open sources is good in terms of customizing the software as per

requirement, no hidden price, no maintenance cost availability of documentation and training manuals constant online support from developers and users are available online on e-mail and chat mode. Marshall Breeding [40] said that when library wanted to have software for library automation open source systems should not be avoided or ignored, they should be evaluated on the basis of their own merits, proven reliability, support, and vision along with commercial solutions.

5. Comparison

Based on use by number of institutions (Table-1), authors have selected two most used software i.e. Libsys developed and promoted by commercial company [7] & SOUL promoted and developed by one of India's leading centre INFLIBNET (Information and Library Network Centre) working in the field of library automation, database development, networking, and resource sharing [8]. Both are compared with KOHA, an open source software doing well and used by many libraries across the globe [9]. Since the purpose of these software are same but developed under different environment. Keeping in view the library's requirement and features of the software, table-2 shows the comparison charts between these.

5.1 SOUL

SOUL (Software for University Libraries) is the software designed and developed by the INFLIBNET an Inter University Centre of University Grants Commission [8]. INFLIBNET is working in the field of library automation, database development, networking, and resource sharing. Software development for library automation is one of its important activities which were initiated in nineties to overcome the monopoly of commercial software vendors[10]. SOUL is installed in 1455 Institutions (up to 27th December 2007) (INFLIBNET, 2007). It works under client-server environment. Looking at the name of the software, one may think that it is meant for university libraries only, but in fact it is flexible enough to be used for automating any type or size of library. Many Academic, Special and Public Libraries from India are using this software for their Library Automation [8].

5.2 Libsys

This is developed by LibSys Corporation India. According to the figure mentioned on its web site it has 1000+ installation in various institutions in India and overseas are using it [7]. It is commercial software.

5.3 Koha

KOHA is the first open-source Integrated Library System (ILS) developed under GNU license. Initially started at Horowhenua Library Trust (HLT), a New Zealand consortium, now it is used worldwide; its development is driven by growing community of libraries. [9]

S.	Feature	Libsys	SOUL	KOHA
1	Server	UNIX , LINUX Pentium machine with SCO Unix/ Unix Ware SunSparc with solaris Alpha with OSF/ 1 RS/6000 with AIX HP -9000 with HP-UX SG with IRIX Windows NT/2000/XP Windows 95/98/NT/2000/ XP/2003/ (Stand Alone)	Windows-NT / Windows 2000 server (Operating System) MS-SQL Server 7.0 / Advance server 2000 (RDBMS) Personal Web Server or Windows NT IIS with option pack 4.0 installed ORWindows 2000 as server for Web OPAC College VersionWindows-98 /ME /NT / 2000 / XP / 2003 (Operating System)	Windows / Linux
2	Client	Standard Windows (95/98 /NT/2000/XP) Web Enabled (JSP implementation) Unix Workstations X-Windows Workstations (xterm) VT220 & compatible terminals Thin Java clients	Standard Windows (95/98/ NT/2000/XP)	Platform independent Any Browser based Machine
3	Web Server			
	Apache	Y	N	Y
	IIS	Y	Y	Y
	Other	N	N	Y
4	Database	Proprietary bibliographic database and as such, does not require an RDBMS. However, the software can be used with either SQL Server, ORACLE, or MySQL as a back-end RDBMS with ODBC compatibility.	MSSQL, MYSQL	MYSQL Dual Database Design. (Text-based and RDBMS). Scalable enough to meet the transaction load of any library, on matter
5	Architecture	Client/Server & Web Based various versions are based on various architecture.	Client/Server Only OPEC is Web based	what the size. Fully Web Based
6	GUI	Y	Y	Y

7	MARC and non-MARC compliance:	N	N	Y
8	Web-based patron catalogue:	Y	Y	Y
9	Character Encoding Unicode for Language Computing Support	UNICODE	ISCII	UNICODE
10	Core modules (Acquisition, Cataloguing, Circulation, Periodical, OPAC, Administration)	Y	Y	Y
11	Digital library management:	Y (Only linking is possible)	N	Y
12	Full Training and Manual	N(only user manual is available, System manual such as installation and configuration of server not provided) System manual kept hidden or not provided so that AMC (Annual Maintenance Contract) can be taken from libraries. A other way to bargain or force libraries to pay them for using their software.	Y	Y
13	Support Team	Costly only on the basis of AMC (10 to 20 % of total costs) charged from the libraries	Y National and Regional soul coordinators are appointed for this, free support is provided	Y No human ware is deputed for this. but online discussion and support is availa-

				ble free of cost.
14	Addition of new feature	Y but charged heavily.	N (from last five years not seen any new version or addition)	Yes very frequently new versions are coming and they are added free.
15	Minor Change or Customization	Yes but very less at users end only Libsys can customize for the users. But not seen any configuration or customization don successful at any library.	Yes but very less at users end	Yes, more than Soul and Libsys. Source code is open, features are free to be used or customized, and Developers are in process of customization features at users end.
16	Price or Customization	4 to 5 lakhand10% to 20% AMC annually, No system training provided	20 to 50 thousand No AMC free support including free training of users as well as system.	Free and Free support.
17	Standard Supported	Partial MARC 21(only selected fields), AACRIIR, Selected Authority fields	CCF Common Communication Format, AACRIIR, Selected Authority fields	Full MARC 21, AACRIIR Authority Data and Subject Headings.
18	License and	Bias with developers and distributors, even committed things are not yet done properly at various places where it is in use.	No other commitment, what is their in it may be used.	GPL General Public License.
19	Ownership	LibSys	INFLIBNET	Katipo communications for the Horowhenua Library Trust in New Zealand Under GPL General Public License. May be distributed re distributed customized by users.

20	Data Migration	Y	Y	Y
21	Backup	Y	Y	Y
22	Latest Release*	Only the libraries who buy new version they can have latest. Others have to pay difference for the latest version.	Approx 5 Year Back Approx 5 Year Back	2007 2007
23	Demo for trial	N	Y	Free to test and use and online demo is available.
24	Nature of developing Organization	Commercial	Non for profit or Government	Developed under open source category

Abbreviation used Y= Yes, N= No

Table-2 Comparison of Library Automation Systems

6. Conclusion

The library that has vision and willingness for automating their libraries, cost and availability of solution is not an issue for them. They can evaluate the best available open source software. When the library wants to automate, the library software has to be evaluated and observed on various points, parameters, and requirements. Open source, freeware and commercial products should be evaluated best on the merits and demerits, proven reliability, support, and vision of the library.

Based on the observations and discussions with the library fraternity, SOUL developed by INFLIBNET emerged as one of the good software, because SOUL has everything open in terms of installation, configuration and future support. Another good thing with this software is that it is meant for the Indian academic libraries. INFLIBNET experts offer lots of consultancy and support related to automation without charging any money. Libraries who do not have much technical expertise can adopt this because INFLIBNET is there to support them. The only drawback with this software is that INFLIBNET is not able to retain its manpower, which are involved with the development and facing manpower shortage. The authors suggest making this software open source under GNU license agreement. This will not only save the efforts and initiative of INFLIBNET but also give a name and fame internationally. From India, this will be a great gift for the open source software movement. Other wise authors fear to lost this prestigious software of the country like the prestigious classification scheme of Dr. S R Ranganathan. For the Libraries, who has IT

savvy skilled manpower can adopt KOHA as discussed and full fill necessary requirements of the library.

Authors suggest the commercial vendors to change their strategy that they should charge money for their

product and new versions, but maintenance of the old version should be made available free. It is difficult for the authors to understand the maintenance cost when library has purchased their product that should work without any bug or problem.

At last authors would like to conclude that open source or open standard is the present and future. Commercial and paid solution can only survive when they will work for the welfare of the society along with their business.

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