Biswas, Goutam and Paul, Dibyendu "NewGenLib, The First Indian Open Source Software: a Study of Its Features And Comparison With Other Software", Conference Proceeding, 23 rd National Seminar of IASLIC held at Bose Institute on Library Profession in Search of a New Paradigm, Kolkata, 10 -13 December, 2008, Special Publication No.48, PP 333-340, ISSN- 09723668

NewGenLib, THE FIRST INDIAN OPEN SOURCE SOFTWARE: A STUDY OF ITS FEATURES AND COMPARISON WITH OTHER SOFTWARES

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ABSTRACT

Discusses the issues like selection criteria of library management software and why open source software is to be opted in this respect. Highlights the features of NewGenLib open source software, the first of its kind developed in India to evaluate it in the line of advantages and disadvantages of open source software. Presents a comparative study of features and functional aspects of NewGenLib open source software with Koha open source software and three other commercial softwares like LIBSYS, SLIM++ and Easylib, all of which are developed in India. Concludes with the expectation that the NewGenLib open source software will be successful in the perspective of changing paradigm in Indian condition .

KEY WORDS

Library management software, NewGenLib, Open source software, Software

1 INTRODUCTION

The activities of library automation and modernization are much-discussed topic in today's changing environment. The library management software has significant roles to play in this respect. The availability of software, the available features and functional modules of software, the standards and compatibility in data format and data exchange, cost of procurement are the basic points of consideration in respect of library management software. Before selecting the software the first and the foremost consideration is the option between

commercial and free software. Many library management softwares are originated and available in India. Most of these are the commercial softwares. The NewGenLib open source is the first such integrated library management software in the open source environment which is originated in India. This article likes to present the features of this software reviewing the basic characteristics that should have with any library management software. The features and operational aspects of NewGenLib open source software have also been compared with other softwares available in free of cost as well as with cost.

2 RECOMMENDED FEATURES OF LIBRARY MANAGEMENT SOFTWARE

According to A T Francis[1] information technology (IT) enables the libraries to handle huge volume of information effectively and efficiently. The concept of 'global information control' can be achieved only through the effective espousal of IT in libraries and information canters. The systems and infrastructure used for information administration should have international standards and compatibility. Selection of appropriate library management software is an important task of the library professionals. Some functional modules of library management software for basic library operations like acquisition, cataloguing, OPAC, circulation, serial control, information services etc. are essential for day to day requirements to manage any library system. Certain other functions related to management aspects like planning, budgeting, financial management, management information systems, reporting are also important. Commercial softwares provide the facility for exporting data only at the 'software developer's level' not at the 'user's level'. This forces the libraries to continue the use of commercial softwares. Authors like Mukhopadhyay[2], Sonker[3], Manjunath[4] and many others have pointed out the core features and services of any good library management software. The selected core features are listed below:

- The core library operations or the functional modules such as acquisition, cataloguing, circulation, serial control, article indexing must be performed without any imperfection by the software.
- Enhanced services like customize report generation, reservation facility, module for interlibrary loan, union cataloguing, authority file support, and retro-conversion should also be supported by the software.

- The Binary or source code should available so that the software can be customized in house.
- The software should be compatible to develop database and exchange data in international standards and formats like MARC21, CCF, MARC-XML, ISO-2709, and Z39.50.
- The points of whether the developer of the software is an institution, or reputed company or few individuals are important. Institution will be the first preference; reputed company is the next priority. The software developed by individual or group of individuals may deviate from continuity.
- Revision of software since the time of its first launch is one of the important factors.
- Whether it can run on major operating systems or not is a matter of concern al so.
- How frequently the software has been installed in the country is an important aspect.
- Whether the software developer facilitates training and guidance after installation is also a considerable factor for selection of software.
- The software should be capable for database security at the modules and functional levels like database protected by password etc.
- Provision for database back-up is an essential feature.
- It should support RFID and Barcode technology.
- The provision should be there to check duplication of data entry in acquisition and cataloguing of materials.
- The facility should be there to store, retrieve, and display and print records in Indian scripts and capability to handle multi languages and scripts.
- The facility to incorporate multimedia information is recommended.
- Provision for thesaurus and dictionaries should be there for validation while selecting the terms during data entry in the library.
- The software should be web-enabled. It should be impossible to remove from the web too. There should be the facility to handle multiple databases at a time.

- The facility to provide customized library services is recommended.
- It should capable to provide real time information processing and retrieval.
- Finally the cost effectiveness of the software is not an unimportant factor.

3 REASONS FOR CHOOSING OPEN SOURCE SOFTWARE

Price of the library software is very high; most of the libraries are not in a position to buy high priced commercial software due to severe budget constraints. Kumar[5] has mentioned various advantages of open source like unrestricted use; free of cost; community involvement in development and maintenance of software; competence compared to other commercial softwares; and the issues of copyright etc. The obvious recognized reason for the organizations like libraries to choose open source software for automation purposes is 'no cost'. There is no restriction but everyone can use, study, modify and distribute the open source software, regardless of a person's position, wealth, social conditions etc. The social aspect of the open source software is tremendous. The development and maintenance of this type of software can be done with community based activities. Anybody can contribute the social group engaged in its development. "Open source software projects encourage innovation and collaboration of community members." [5] Peer group members are very much involved in these activities. It is also the reason in favour of open source software as it is interoperable, customizable according to the needs and standards. The most judicious reason in favour of the use of open source software is the legal aspect. The licenses are committed to users' freedom of use, modify and redistribution of the programme.

4 THE NewGenLib OPEN SOURCE SOFTWARE

The NewGenLib has appeared as open source software during 2005, the latest version of which is 2.0. According to the homepage of this software "it is the result of collaboration between domain specialists in library automation and software specialists." (http://www.verussolutions.biz/web/node/18 Accessed on 01.07.2008) The Kesavan Institute of Information and Knowledge Management, a professional body at Hyderabad has provided the said domain knowledge. The software development expertise has come from a company called Verus Solutions Pvt. Ltd. A Memorandum of Understanding between above - mentioned organizations has been signed to keep the product up to date both by domain

specialists and software professionals'. It has the capability to create fully automated li brary. The download count of this software, as on 23 March 2008, is 5172.

5 SALIENT FEATURES OF NewGenLib OPEN SOURCE SOFTWARE

Some of the salient features of this open source software are listed below:

- **Licencing:** The NewGenLib open source is covered und er the most widely used open source software licensing system called GNU General Public License.
- **Source Code & User Mannual:** The open source binaries and source code of NewGenLib open source software are downloadable. Installation notes for Linux and Windows are also available at their site. The user manual is also downloadable.
- **User's Feedback:** The users of the software can post their feedback with views, problems, solutions, discussions, etc to the organization.
- **Architecture & Backend:** It is web-based and has a multi-tier architecture; it uses Java (a swing-based librarian's GUI), the JBoss (J2EE-based Application Server) and PostgreSQL as default backend.
- **Functional Modules:** NewGenLib's functional modules are : acquisition management (monographs and ser ials); technical processing; circulation control; system configuration; a desktop reports application and an end-of-day process (scheduler) application.
- **Data Create & Exchange Format:** It is compliant with MARC-21 format. It has a MARC editor. It allows seamless bibliographic and authority data import into cataloguing templates
- **Mail Server:** SMTP mail servers can be configured for e-mails and that can be sent form functional modules.
- **Open Access Compatibility:** NewGenLib open source allows creation of institut ional open access (OA) repositories compliant with the OAI-PMH.
- **:** NewGenLib open source is Unicode 3.0 compliant.
- **RFID Technology:** It has inbuilt RFID support.

6 ADVANTAGES OF NEWGENLIB AS OPEN SOURCE SOFTWARE

The advantages of NewGenLib open source may be perceived as follows in the light of the advantages of open source software as pointed out by Richard W Boss [6]:

Ability to tailor to fit local needs: The availability of the source code means that a user can modify and enhance the software to more closely fit to its own needs. Unlike with proprietorship software, the user, not a vendor, sets the development priorities. The user is also able to set its own priorities for 'bug fixes'.

No restriction on use: Unlike commercial software, there are any contrac tual boundaries on how the software will be used. While NewGenLib covered under the GNU General Public License that assures users about right to distribution and the recipients also have the right to modify and redistribute. A subsequent user may, therefor e, decide to protect the enhancements that it makes by copyrighting them.

Low cost: There is no charge for the software; therefore, the monitory burden required for the commercial software is avoided. The major cost involves with the ongoing development and maintenance. However, if a user does a lot of 'tailoring to fit unique local needs' then only the cost will escalate.

However, the above-mentioned author has pointed out some disadvantages of this type of open source software. These are lack of coordination, inadequate training and technical support, lack of participation, lack of guarantees and remedies, scalability and speed etc. However, the developer of the NewGenLib open source software is expected to solve these disadvantages. However, the open source software may not offer the scalability and speed of commercial softwares because the easy-to-use and general-purpose programming languages used are not very scalable and are slower than other languages. But NewGenLib open source software has overcome this problem by using C programming language. On the other hand the Versus Solution Pvt. Ltd organizes workshops and training programmes for appropriate support.

7 NewGenLib OPEN SOURCE AND OTHER SOFTWARE

The comparative features of the above-discussed softwares can be understood with the help of following tables in the annexure and the discussions in this section. We have

selected four softwares for library management like Koha, LIBSYS, SLIM++ and Easylib to compare NewGenLib open source software with them.

Among these the Koha (http://www.koha.org) is one of the important full-featured open-source integrated library management softwares. It is developed initially in New Zealand by Katipo Communications Ltd and first deployed in January 2000 for Horowhenua Library Trust. It is currently maintained by a team of software providers and library technology staff from around the globe. The latest version of it is 3.0.0, which is released in January 2008. Remainning softwares under study are developed in India and are commercial softwares. LIBSYS (http://www.libsys.co.in) is one of the most important commercial software, as per its use in Indian library is concern , has developed by a New Delhi based software company - InfoTek Consultants Pvt. Ltd in 1984. The SLIM++ (http://www.slimpp.com) is developed by a Pune based software concern namely Algorhythms sometime during early 1990s. The Easylib (http://easylib.sedam.org) has developed by Easylib Software Pvt. Ltd. at Bangalore. The reason for selecting these softwares to compare with NewGenLib open source is that all these are, except Koha, developed in India.

We have adopted a simple system of scoring against different features for different softwares selected for study. One point each has given for the features available for and zero each for the features not available in any software in the following tables in the annexure. However, it must be noted that all features are not equal in significance.

It is revealed form the projected scores that the NewGenLib open source software is much in advance of the others. As far as the general features (Table 01) are concerned, the NewGenLib open source software is ahead with five more features compared to the other open source software Koha and much more advance than the commercial softwares under study. As far as the functional modules (Table 02) are concerned the NewGenLib open source software is again remain in advance than the Koha but more or less equally featured with the commercial softwares. It is also revealed that the features of NewGenLib open source is more in number in all other aspects like features of OPAC (Table 03), features of circulation (Table 04) and cataloguing and information services (Table 05) than all other softwares selected for study.

8 CONCLUSION

This paper is the part of a project of study of applicability of NewGenLib open source software in academic library environment. This paper restricted only within the study of the features including the comparative state of this software with other open source as well as close source commercial softwares, three of these are developed in India. In this very brief study it is clear that this software would be applicable in Indian libraries as far as its different features are concerned. It supports all the functional modules as well as the web interface needed for a library. NewGenLib has same features compared to Koha and commercial softwares under study. In a developing country like India, where library budget is a major constraint, the first Indian origin open source software is incredibly useful. In the new paradigm of information society, software like NewGenLib open source software is a basic requirement as a primary resource. We needed customization and continuous support from the developers end as well as continuous research from the end of the professionals.

9 REFERENCES

1. FRANCIS (A.T.) Software Problems in Library Automation in India, In *"Information management in academic and research libraries"* ed by Mahapatra et al. Ahmedbad: INFLIBNET/UGC, 1998. p. 60-64.

2. MUHKOPADHYAY (Partha Sarathi.) Comparative study of library management software: an Indian scenario, In "*Automation and networking of college libraries*" ed by Biswajit Banerjee, Kolkata :Maulana Azad College , 2005, p. 23-42

3. SONKER (Sharad Kumar.) Implementation of Koha: an open source library management software. Accessed on 01.07.2008 from <http://ncsi-et.ncsi.iisc.ernet.in/gsdl/collect/tracol/index/assoc/ HASH01cc.dir/doc.doc>

4. MANJUNATH (G. K.) Library automation: why and how? Accessed on 30.06.2008 from <www.igidr.ac.in/lib/paper1.htm.>

5. KUMAR (V Vimal.) Selection and management of open source software in libraries. Asian School of Business, Padmanabha Building, Techno Park, Trivandrum. Accessed

on 01.07.2008 from <http://eprints.rclis.org /archive/00008739/01/OSS -selection-management.pdf>

6. BOSS (Richard W.) Open source integrated library system software. Accessed on 05.07.2008 from <http://www.ala.org/ala/pla/plapubs/technotes /opensource 2008. doc>

10 ANNEXURE

Table 01: Comparative General Features of Selected Software

General Features	NewGenLib	Koha	LIBSYS	SLIM++	EASYLIB
Authority file & controlled vocabulary	1	1	1	1	1
Client server architect	1	1	1	1	1
Complete web based functions	1	1	1	1	1
Customized report generation	1	1	1	1	1

Give technical support after installation	1	1	1	1	1
GUI and color	1	1	1	1	1
Interlibrary loan system	1	1	1	1	1
Intranet support	1	1	1	1	1
Retro conversion	1	1	1	1	1
Standard report administration	1	1	1	1	1
Support International metadata standard	1	1	1	1	1
Support multilinguality	1	1	1	1	1
Support network environment	1	1	1	1	1
Ability to build digital library	1	0	0	0	1
Ability to build repository	1	0	0	0	0
Article Indexing	1	0	0	0	0
Associate component found in open source	1	1	0	0	0
Digital library integration	1	1	0	1	1
Linux and Windows OS compatible	1	0	0	0	0
No restriction of use	1	1	0	0	0
Power search facility	1	1	0	0	1
Scalable and high speed	1	0	1	1	1
Union cataloguing	1	1	1	0	1
Score	**23**	**18**	**15**	**16**	**18**

Table 02: Comparative Features of Functional Modules of Selected Software

Functions	NewGenLib	Koha	LIBSYS	SLIM++	EASYLIB
Acquisition	1	1	1	1	1
Budget Control	1	1	1	1	1
Cataloguing of monograph	1	1	1	1	1

Cataloguing of electronic documents	1	1	1	1	1
Circulation	1	1	1	1	1
Inter Library Loan	1	1	1	1	1
Library Statistics	1	1	1	1	1
OPAC	1	1	1	1	1
Reports Generation	1	1	1	1	1
Cataloguing of website	1	0	0	1	0
Import/Export	1	0	1	1	1
Serial Control	1	0	1	1	1
Stock taking	1	0	1	1	1
Score	**13**	**09**	**12**	**13**	**12**

Table 03: Comparative Features of OPAC of Selected Software

OPAC Features	NewGenLib	Koha	SLIM++	LIBSYS	EASYLIB
Multimedia	1	0	1	0	1
Library Map	N.F	0	0	0	1
Web site cataloguing	1	0	1	0	0
Electronic documents cataloguing	1	1	1	0	1
Reservation through OPAC	1	1	1	1	1
Can staff modify index field	1	1	0	0	0
Can staff modify display format	1	1	1	0	1
Facility for WEBPAC	1	1	1	1	1
Score	**07**	**05**	**06**	**02**	**06**

Table 04: Comparative Features of Circulation of Selected Software

Circulation Features	NewGenLib	Koha	SLIM++	LIBSYS	EASYLIB

Issue	1	1	1	1	1
Return	1	1	1	1	1
Renewal	1	1	1	1	1
Reservation	1	1	1	1	1
Use of barcode technology	1	1	1	1	1
Fines as per different users and documents	1	1	1	1	1
Reservation (for specific time period)	1	1	1	1	1
Report generation	1	1	1	1	1
Use of RFID	1	N.F	N.F	1	N.F
Score	**09**	**08**	**08**	**09**	**08**

Table 05: Comparative Features of Cataloging & Information Services in Selected Software

Information Services	**NewGenLib**	**Koha**	**SLIM++**	**LIBSYS**	**EASYLIB**
Printing of catalogue in AACR format	1	0	0	1	1
Printing of catalogue in CCC format	1	0	0	1	0
Exporting /Importing of data	1	0	1	1	1
Report generation	1	0	1	1	1
SDI service	1	0	1	1	1
CAS service	1	0	1	0	0
Score	**06**	**00**	**04**	**05**	**04**