NewGenLib, the first Indian Open Source Software: a Study of Its Features and Comparison with Other Software

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Abstract

This paper highlights the features of NewGenLib open source software, the first of its kind developed in India. Discusses the issues like selection criteria of library automation software; why open source software is to be opted; the features of NewGenLib open source software and evaluation of these in the line of advantages and disadvantages of an open source software. Also presents a comparative study of features and functions of NewGenLib open source software with Koha open source software and the commercial software like LIBSYS, SLIM++ and Easylib, all of which are developed in India. The paper concluded with the expectation that this software might be successful in the perspectives of changing paradigm of Indian condition.

Key Words: NewGenLib, Library automation, Software

Introduction

The activities of library automation and modernization are much discussed topic in this current period. The issues of software in this respect have critical roles to play. The availability of the software, the available features and functional modules of the software, the standards and compatibility in data format and exchange, cost of procurements are the basic points of concern. Before a software to be selected the first and the foremost consideration for any type of library is to decide whether to opt for commercial software or free software. There are various library management software those are originated and available in India now. Almost all of them are the commercial software. The NewGenLib open source is the first such integrated library management software in the open source environment originated in India. This article likes to present the features of NewGenLib open source software reviewing the basic features that should library management software have. Various features and functionalities of NewGenLib open source have also been compared with other few software of free and commercial in nature.

Standard of Library Management Software

According to A T Francis [1] information technology (IT) enables the libraries to effectively and efficiently manage large volume of information. The concept of global information control can be achieved only through the effective adoption of IT in libraries and information canters. The systems and infrastructure used for information management should have international standards and compatibility. Some functional

modules are essential for day to day requirements for library management systems. These are the basic operations like acquisition, cataloguing, OPAC, circulation, serials control, information services. Certain other functions of management aspects like planning, budgeting, financial management, management information services, reporting are also important. Some commercial software provides the facility of exporting of data only at the 'software developer's level' and not at the 'users' level'. This may be indirectly force the libraries to continue the use of these software on commercial interests. There are many works like by Partha Sarathi Mukhopadhya [2], Sharad Kumar Sanker [3], G. K. Manjunath [4] and many others on different features of library automation software, have pointed out the core features and services should be in library software.

- The core library operations or the functional modules such as acquisition, cataloguing, circulation, serials control, article indexing must be performed by the software.
- Enhance services like customized report generation, reservation facility, interlibrary loan module, union cataloguing, authority file support retro-conversion should also be supported by the software.
- The software should be compatible to create and exchange database in international standards and formats like MARC21, CCF, MARC-XML, ISO-2709, and Z39.50.
- The Binary or source code should be available so that the software can be customized in house.
- 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 be support RFID and Barcodes technology.
- The provision should be there to check duplication of data entry in acquisition and cataloguing.
- The facility should be there to store, retrieve, display and print records in Indian scripts and capability to handle more number of languages and scripts.
- Provision for thesaurus and dictionaries for validation while selection of terms during data entry period in the library.
- The software should be web-enabled. It should web ineffaceable too. There should be the facility to handle multiple databases at a time.
- The facility to provide customized library services should be there.
- The capability to provide real time information processing and retrieval should be there.
- The facility to incorporate multimedia information.
- Whether the developer of the software is an institution, or reputed company or few individuals is an important factor. The first preference should for institution and second preference for the reputed company. 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 is available on major operating systems or not is a matter of concern also.
- How commonly 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.
- Finally the cost effectiveness of the software is not an unimportant factor.

Reasons for Choosing Open Source Software

Price of the library software are very high, most of the libraries are not in a position to buy high priced commercial software due to severe budget constraints. V. Vimal Kumar [5] has mentioned various aspects regarding this like no restriction of use, free of costs; community involvement in development and maintenance of software; competence of software compared with other commercial software; and the legal aspects in his article. The obvious formal reason for the organizations like libraries to choose open source software for automation purposes is the cost of software, which is free. There is no restriction but everyone can use, study, modify and distribute the open source software, regardless of a person's status, wealth, social background etc. The social aspect of the open source software is very tremendous. The development and maintenance of this software can be done with community based activities anybody can contribute the social group. "Open source software projects encourage innovation and collaboration of community members." [4] Peer group members are very much involved in this business. It is also the reason in favour of open source software is it is interoperable, customizable according to the needs and fulfills the standards. The most judicious reason in favour of it is the legal aspect of the use of open source software. The licenses are copyright protected and committed to user's freedom of use, modify and redistribute the programme.

The NewGenLib Open Source Software

It is launched as open source during 2005, the latest version of which is 2.0. According to the software homepage (http://www.verussolutions.biz/web/node/18) "it is the result of collaboration between domain specialists in library automation and software specialists." The Kesavan Institute of Information and Knowledge Management (KIIKM), 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 of above mentioned organizations has been signed to keep the product up to date both by domain specialists and software professionals'. It has capability to create fully automated library. Its download count as on 23 March 2008 is 5172.

Salient Features of NewGenLib Open Source software

- **Licencing:** It is open source under the most widely used open source software licensing system called GNU GPL (General Public License).
- **Source Code & User Mannual:** The open source binaries and source code can be downloaded. Installation notes for Linux and Windows are also available at the 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 : Acquisitions management (monographs and serials); technical processing; circulation control; system configuration; a desktop reports application and an end-of-day process (scheduler) application.
- **Data Create & Exchange Format:** NewGenLib open source 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 emails that can be sent form functional modules.
- **Open Access Compatibility:** NewGenLib open source allows creation of institutional open access (OA) repositories compliant with the OAI-PMH.
- **Unicode Compatibility:** NewGenLib open source is Unicode 3.0 compliant.
- **RFID Technology:** It is RFID ready.

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 its own needs. Unlike with proprietary products, 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 contractual restrictions on how the software is used. While some developers use the GNU General Public License that assures users that they have the right to distribution and those to whom they distribute also have the right to modify and distribute, other developers merely declare that their software is in the public domain. A subsequent user may, therefore, decide to protect the enhancements that it makes by copyrighting them.

Low cost: There is no charge for the software; therefore, the capital outlay required by commercial software is avoided. The major costs are ongoing development and maintenance. If the number of users is large, and they share their efforts, each user's cost is reduced. However, if the number is small or a user does a lot of tailoring to fit unique local needs that are not shared by other users, the cost can escalate.

However author pointed out some disadvantage 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 is expected to solve these disadvantages. The of open source software may not offer the scalability and speed of proprietary software 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 has overcome

this problem. On the other hand the Versus Solution Pvt. Ltd organizes workshop and training programmes for appropriate support.

NewGenLib Open Source and Other Software

Hence comparative features of the above-discussed software can be understood with the help of following tables in the annexure and the discussions in this section. We have chosen four different other software for comparison of their features and options with NewGenLib open source.

Among these four the Koha (http://www.koha.org) is a full-featured open-source integrated library software. Developed initially in New Zealand by Katipo Communications Ltd and first deployed in January of 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 is 3.0.0, which is released in January 2008. All the other selected software born in India and are commercial software. LIBSYS (http://www.libsys.co.in) is one of the most important commercial software, as per use in Indian library, has developed by New Delhi based software company - InfoTek Consultants Pvt. Ltd in 1984. The SLIM++ (http://www.slimpp.com) has developed by a Pune base software concern 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 for comparison 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 software selected for study. One point each 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 reveals form the scores of the table that the NewGenLib open source software is ahead of the other four. As far as the general features are concerned, the NewGenLib open source is ahead with six more features (Table 01) compared to the other open source software Koha and more advanced than the other three. As far as the functional modules (Table 02) are concerned the NewGenLib open source is again advanced than the Koha but more or less equally featured than the commercial software. The NewGenLib is also more featured than all others in different considerations like features of OPAC, features of circulations and cataloguing and information services.

Conclusion

This paper is the part of our overall project of study of applicability of NewGenLib open source software, which is first in its kind developed in India. This paper restricted only with the study of the features of this software as an open source including the comparative features of this software with a similar type of open source software and other three commercial software developed in India. With this brief study it is clear that this software would be applicable in Indian libraries as per as its different features are concerned. It supports all the functional modules as well as the web interface needed for a library. It has all features like Koha and the commercial software compared in this paper. Third world country like India, where library budget is a major problem, the first India born open source software will very much helpful. In the new paradigm of information society software like NewGenLib open source is a basic requirement as a primary

resource. We need customized and continuous support from the developers end as well as continuous research from the end of the professionals.

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Annexure

Table 01: Comparative Features 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 Verification	1	0	1	1	1
Union Catalogue	1	0	1	1	0
Score	**14**	**09**	**13**	**14**	**12**

Table 03: Comparative Features OPAC					
	NewGenLib	Koha	SLIM++	LIBSYS	EASYLIB
Multimedia	1	0	1	0	1
Library Map	0	0	0	0	1
Web site cataloguing	1	0	1	0	1
Electronic documents cataloguing	1	1	1	0	1
Reservation through OPAC	1	1	1	1	0
Can Staff modify index field	1	1	0	0	1
Can Staff modify display format	1	1	1	0	0
Facility to web OPAC	1	1	1	1	1
Score	**7**	**5**	**6**	**2**	**6**

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**