NewGenLib 3: An Integrated Open Source Library Management System that Makes your Library Visible in Web

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INTRODUCTION

Over the past decade, Open Source Software (OSS) has evolved from small-time projects to well-funded ones with the involvement of many individuals/institutions. These are focused on development involving the use of many other open source technologies which have been successfully deployed in enterprises. In the last four or five years, the web has become a platform for delivery of infrastructure, software and platform services, popularly called "computing in the cloud," and has grown as an alternative to conventional web-based systems. Web 2.0 technologies allow harnessing of collective intelligence, making a large pool of globally distributed and widely diversified participants able to come together to develop software which can effectively help them to develop robust systems that meet needs across a broad range of institutions. The success of this shared intelligence in OSS development is so strong that it has challenged the conventional wisdom of developing and distributing software by commercial entities and has completely revolutionized the ways in which organizations and individuals create, distribute, and use information systems and services. This makes it an increasingly important topic for information system research (Crowston and Wade, 2010). There are now thousands of active OSS projects spanning a wide range of applications besides the much well known Linux OS, Apache web server, or Mozila Firefox project. Most of the 'killer apps' of the internet applications are used by millions of people often without even realizing they are using open source software. This wave of OSS has also made inroads more than a decade ago in the area of Library and Information Science. Koha had gone first online on 2000 and several OSS projects were developed with an aim for application in the library and information science domain. Many of them, like Greenstone, DSpace, and VuFind, have developed a wide user base across the globe, and have shown sustained development of features and significant cross-fertilization of ideas based on shared experiences. Libraries and OSS are a natural fit as both promote learning and understanding through dissemination. The parallels between library philosophy and OSS philosophy have been espoused by many advocates of OSS in libraries

(Chudnov, 1999; Morgan, 2006; Corrado, 2009, Engrad, 2010). Moreover, OSS democratizes the use of software applications in libraries irrespective of the type or size of the library (Haravu, 2004). In addition to the philosophical resemblance, there are budgetary reasons for libraries to look for less costly but quality technology solutions that can help them to serve their users effectively. Library budgets are shrinking, the cost of library resources is rising, and user expectations are ever increasing. In this situation, OSS provides an excellent help to librarians for economically and effectively automating their operations and services while acting as a continuous reality check on user needs. An Integrated Library Management System (ILMS) is normally expected to provide for all of the usual library functions like acquisitions, cataloguing, circulation, administration, serials management, OPAC, ILL and statistical reporting with a facility for directly accessing any sub modules across these main functional modules. Until 2008, Koha had been seen as the most active full fledged OSS based ILMS solution, although about twelve active open source integrated library systems have been identified (Boss, 2008). Besides Koha, the other most active project among those was Evergreen Integrated Library System for public libraries, which was developed by the Georgia Public Library Service for use by the Georgia Library PINES Program, a consortium of 252 public libraries in that state. However, by 2008, it had only two usable modules viz., Cataloguing and Circulation. Other modules were yet to be completed. The remaining OSS based ILMS projects like OpenBiblio, PhpMyLibrary, or Emlida have a very small market impact and little user base. NewGenLib version 2.1 was declared Open Source Software under GNU General Public License (GNU GPL) version 3 on 9 January 2008. It is an ILMS software developed by Verus Solutions Pvt. Ltd., in collaboration with the Kesavan Institute of Information and Knowledge Management, Hyderabad, India. NewGenLib began as proprietary software, and its version 1.0 was released in March 2005. Many large libraries in India, such as Bangalore University Library have successfully implemented it, and are using it for managing their housekeeping activities as well as services. With the release of NewGenLib2.1 as OSS version, many libraries in India like Learning Resource Centre(LRC) of Indira Gandhi Institute of Technology, Knowledge Centre of Birla Institute of Management Technology (BIMTECH) and others, have experimented with it and implemented it. In September 2011, a new version [3.0.] was released. From then on, the developers have been releasing several bug fixes and upgrades and new functionality features quite regularly. The support for many libraries that now use the software in India, SE Asia,

Africa and the Middle East is based on remote desktop applications that involve both developers and users in one or more interactive sessions. The current release is now available on cell phones and tablets running Android 2.1. or above.

Technology and Architecture

NewGenLib is a fully web based integrated library management software that runs on distributed computers through a network or server. It can also run on local area networks without access to the Internet, although some of the advantages of using it via the web will be lost. It uses a number of well supported and widely-used, reliable and well tested open source components like PostgreSQL, Apache Tomcat, and Solr Lucene. . NewGenLib is entirely Java-based, platform neutral, and uses the following related software technologies in its presentation, web server and database layers.

Technology used	Reason and advantages
Java.6.0	a) Operating System independent, fast evolving mature and very powerful platform highly used for large enterprise management system software b) Larger support from the market. Many third party open source libraries available c) Proven upward scalability
PostgreSQL 8.X Database server	a) More powerful open source enterprise database, more focused on data integrity, and stricter at complying with SQL specifications (wiki.postgresql.org). b) Very stable with large scalability and available on Windows and Linux platforms c) A number of library related other projects like Dspace, Evergreen uses it
Apache Tomcat	a) Most widely used free and open source Web server b) Most stable and Java based.

Technology used	Reason and advantages
Spring Framework	Earlier version of NewGenLib used Session EJBs in the Service layer. This is replaced by more efficient and light weight service layer using Spring framework Uses lesser memory footprint compared to EJBs
Hibernate framework	Earlier version of NewGenLib used Entity EJBs. This is replaced by more efficient ORM(Object Relational Model) layer powered by Hibernate. It solves object-relational impedance mismatch problems by replacing direct persistence-related database accesses with high-level object handling functions (Wikepedia)
Open Office	Open Source and free office suite, available on Windows and Linux platforms used for generation of all form of letters..
Commons mail 1.2	Used for auto-email dispatch and connects to any SMTP server and also Gmail (including Google Apps) SMTP service
Commons HTTP Client and File upload package	To upload attachments and download digital attachments
Commons FTP	FTP access to digital attachments
XML and JSON	XML and JSON are used for messaging between Clients and Server. Messages are compressed through GZIP before sending over network
JDOM	To generate and parse XML documents
JSON	To generate and parse json data
Jakarta POI	To generate reports and other data in Microsoft XML Format
HTML Parser	To edit and generate HTML documents
Lobo browser	Used for displaying HTML content
C3P	Database connection pooling

Technology used	Reason and advantages
Lucene and Solr	a). Fast evolving and highly popular open source enterprise search platform, used as search engine for indexing Bibliographic and Authority data searches b). It has also been used by a no. of similar library related projects like Vufind, ExLibri's commercial discovery system, etc (Houser, John 2009)
Twitter4J	To send Twitter messages and Direct Messages to followers
Marc4j	To read/write MARC data in MARC Communications and MARCXML formats
Struts, JSTL, JSP	Struts, Java Standard Tag Library and JSPs are used for Web OPAC development (used up to version 3.0.3 U5)
Jquery Freemarker template	Used as Java Script Framework library in Web OPAC The OPAC of Version 3.0.4 (will be released soon) uses an open source template engine called Freemarker. The OPAC is now template based and one can change the look and feel easily

NewGenLib supports following major international standards for better interoperability.

- MARC21 – For bibliographic data
    - Bibliographic record data structures designed for MARC21 formats
    - Import and Export in ISO 2709, MARC XML
- MARC21 – For authority files
    - Authority files data structures designed for MARC21 formats
    - Import available in ISO 2709
- MARC21 – Holdings
    - Holdings data structures designed for MARC21 Holdings.
- Z39.76 – Holdings statement display
- MODS 3.0, AGRIS AP
    - Bibliographic records can be exported in MODS 3.0 and AGRIS AP

- ISBD
  - Record display and punctuations as per ISBD rules.
- OAI – PMH
  - Allows harvesting (manual) from external repositories
  - Create Open archive collections, and items, search the repositories and also act as data provider
  - Metadata formats: MARC XML, DUBLIN CORE, MODS 3.0 and AGRIS
- SRU/W
  - Federated search engines can search bibliographic databases using this protocol
  - Query language: CQL (Common Query Language), bench marking Level 1 compliance
  - Profiles used: BATH, and DUBLIN CORE
  - Metadata standards: MARC XML and MODS 3.0
- Unicode 3.0
  - Supported Unicode 3.0
- Z39.50
  - Z39.50 Client for federated searching

It is to be noted that most of the Library Management Software (especially in India) claims that they are MARC21 compatible. However, very few of them are properly able to map MARC fields in their data structure. Prior study has shown that NewGenLib is fully MARC 21 compatible (Mukhopadhaya, 2009).

NewGenLib is based on modular architecture, object-oriented analysis and design and middle-tier technologies. It is based on the following 5 tier architecture (see Figure -1):
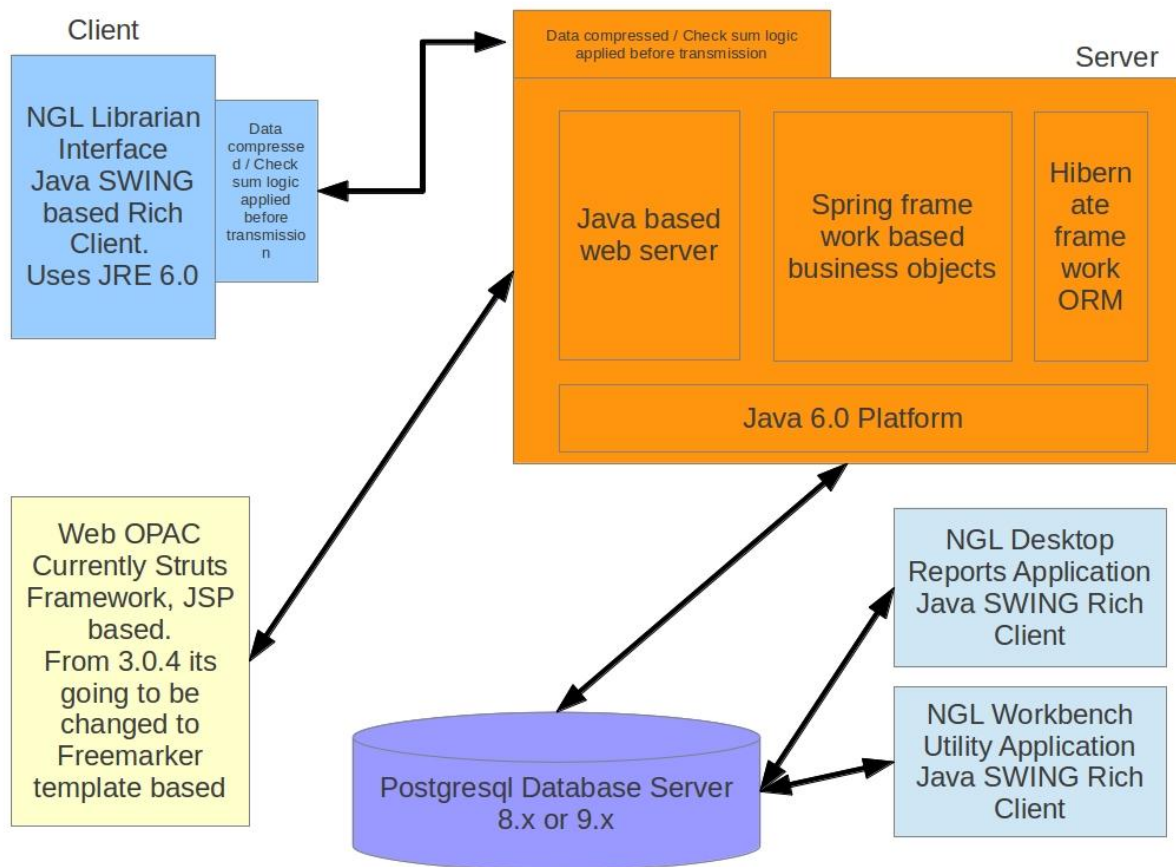
Fig.-1: Architecture of NewGenLib

a. Presentation Layer: Uses web-based Java Rich Client for the librarian interface and HTML based OPAC.

b. *Web Server Layer:* Uses front-controller servlets for processing http requests and responses from the presentation layer

c. *Business Process Layer:* All the server side processing and business logic is present in this layer

d. Object-Relational Model Layer: Maintains classes equivalent to database tables in the RDBMS by using Hibernate. This ensures database interoperability.

e. *Database Server*: Uses PostgreSQL

NewGenLib uses XML streams for exchange of data between clients and servers in its different modules, and Java Rich Client for librarian's interface. The use of JRC in the librarian's

interface makes it possible that part of the processing works can be done by the client, thus reducing load and memory usage for sessions on the server, and unnecessary network usage. NewGenlib 3 uses the Yahoo! User Interface Library (YUI) framework for Cascading Style Sheets (CSS) to maintain good browser compliance and standard layout features.

Advanced Functional Features

NewGenLib is the result of the joint efforts of experienced library professionals and information technology experts from India. So, naturally, the system is influenced by the workflow process followed in the Indian subcontinent. For instance, payment of subscription dues for journals is processed in NewGenLib as per the practice followed by the libraries in the Indian subcontinent. However, in the libraries in the western countries, these payments are usually done by back office or administration departments rather than the library. This could be the reason for non inclusion of the payments for journal subscriptions in Koha (Mukhopadhaya, 2012). The functionality of the Serials Management sub-system in NewGenLib is as good as the best of western commercial ILMS. In fact, NewGenLib's adherence to proven MARC standards for the description of serials, and the use of Captions and Patterns for expecting receipts of serial issues, so vital in serials management automation, is quite elaborate, yet quite intuitive for serials managers. To understand its modular functionalities and workflow process, one should go through the book on automation by the domain specialist of NewGenLib (Haravu, 2004).) In addition, many functional details of each module have been given by Haravu (Haravu, 2009).

Some functional features which are not available with 2.xx version are mentioned:

1. Android mobile and tablet capable

2. Integration with Twitter helping send messages of transactions directly to users' Twitter accounts (see Figure - 4A).

3. In OPAC, a list of new arrivals can be seen in a user defined period.

4. Flexibility of defining own search field in OPAC.

5. Enhanced contents

      • Book jackets

      • Google preview

6. Zotero compliant OPAC

7. RSS Feeds in OPAC

8. Faceted Browsing (Refining search results) (Figure – 4B).

9. Suggestion for other books in the rack (see Figure - 4C)

10. RFID supports

11. Provision for frequently used predefined templates along with freedom of defining own customized data entry template (see Figure - 2).

12. Simple spreadsheet -like cataloguing input format.

13. Icons for quick utility tools to merge catalog records, retrieve duplicates, update additional copies, edit catalog records and make a copy of the catalog record.

14. Two useful utility icons - User information and item information for complete and detailed information of the item and user respectively (see Figures - 3A and 3B).

15. Configurable SMS system - a proof of transaction.

16. Integration with Gmail or paid mailbox account.

17. Loan period can be in hours, days, or up to a particular day.

18. Enhanced Report Module for generating in .csv format with a provision for wide customization.

19. Provision for integrating with Vufind SOPAC (Ex: OPAC of the Library of Bangalore University).

20. Catalogue can be harvested through Google site map, and thus the visibility of the library can be further improved.

More details of features added /modified, and bugs fixed in every update are available at http://newgenlibofficial.wordpress.com/.

Practitioner's View:

The Learning Resource Centre (LRC) of Indira Gandhi Institute of Technology (IGIT) has been using NewGenLib since August 2008. Its implementation started with the exploration and experimentation of three main modules viz. Administration, Cataloguing and Circulation. Gradually, other modules like Acquisitions, Serials Management, and Reports were experimented with, and are used in LRC. While implementing the NewGenLib in LRC, some difficulties were faced, and also some limitations of some modules were noticed. These included cumbersome fine administrations, unavailability of report customization, etc. (Giri and Sengar,

2011). Presently, NewGenLib is being used as an integrated library management system for managing all housekeeping activities and for providing services, rather using selective modules like Cataloguing, Circulations, OPAC and Report modules. The developer of NewGenlib released version 3.0 in September 2011. From then on, they are releasing minor/major updates or bug fixes in a time interval of about three months. In the absence of any vendor support as well as in a smaller user community, LRC has developed a policy that after every release, professionals in LRC have to experiment with the newer version until they are satisfied, and if they find any bug or difficulties, the same should be posted in the forum for verification. If the professionals who are experimenting with the newer version are satisfied, then the system is put on trial in LRC in parallel with the existing old version for at least a month's time. . In this way, LRC has been able to move to the current version of NewGenLib 3.03 U5. The OPAC of LRC was on LAN till Feb 2011. From March 2012, OPAC has been put on Live IP and id available at http://202.159.218.126:8080/newgenlibctxt/ . LRC has about 1300 patrons/users including students, faculty / researchers and staff. For wide use of OPAC among them, LRC has disseminated Live IP information through the library Facebook account (www.facebook.com/IGITLRC) and Twitter account (www.twitter.com/IGITLRC) along with putting it on the departmental notice board and in the group mailing system. It has been mandatory for patrons to reserve library documents and make recommendations for acquiring new documents in LRC only through OPAC from June 2012. The final approval of the list of titles to be procured is also done by the head of the department using the selective power given to him to use the acquisitions module through the librarians' interface from their desktops. After approval, placing supply orders with vendors, bill payments for supplied documents, accessioning, cataloging and report generation, are all done integrally with NewGenLib. The rapid internalization of this software among LRC staff was possible due to following reasons:

- Almost every window is self-explanatory.
- Context sensitive help is available every window (see Fig 2).
- Ease of use of different modules.
- Seamless logically integrated workflow among the modules.

In addition, modules like Acquisition and Serials Management, which are generally less used by many libraries in India as has been observed by the LRC professionals having prior experience with some proprietary software in their earlier workplaces, are found to be quite suitable to

LRC's workflow. The easy import of catalogue data from the catalogues of other libraries has also considerably reduced the work pressure in the technical processing section. Integration of LRC's Gmail account in NewGenLib via smtp.gmail.com at port 587 has been very useful as it doesn't have a paid dedicated mailbox account from its ISP provider. Thus, with circulation of each document to patrons, the system automatically sends issue/return slips to the patron's mailbox through LRC's gmail account igitlrc@gmail.com. In addition, auto-reminders sent through the mail have considerably reduced the number of overdue materials with patrons.

The majority of LRC's patrons are undergraduate students. They come to the circulation counter in groups for issue/ return of documents at the time of the interval between classes or at other intervals. So, there is a sudden long queue of students who are mostly in a hurry. The following innovative feature in the newest version has substantially enhanced circulation speed:

1. When a patron id is entered in issue window, it flashes a message if there are overdue materials with that patron (see Fig - 3A).

2. The earlier version generates issue/return slips in different popup windows with every circulation. In the newer version, showing 'task successful' in the same window instead of generating slips in different windows and back end e-mailing to the patron's mail reduces circulation time.

3. Two utilities - patron information (see Fig. 3A) and item information (see Fig. -3B) help in providing answers on the most widely-used queries very quickly. Queries on a document's circulation history (i.e., how many times the book had been issued) to get the most widely used book on the topic and other information about the users -like the number of documents still with the user- or to cull out a specific document details from the user's circulation history are very common.

4. Auto prevention of multiple copies of the same documents helps maximum possible democratic use of documents.

5. Like the LRC of IGIT many libraries of Indian universities and colleges do not have photocopier machines within the library premises due to several reasons, though they may be available within the institution's campus. The newly added hourly-basis issue/return helps patrons to take reference material for photocopying without manually maintaining the records.

6. In circulation privilege matrices, the addition of a defining loan period up to a specific date is found to be most helpful in managing the Book Bank system effectively. As in the Book bank system, issuing of books is started from the beginning of every semester and they must be returned at the end of the semester, and unless the patron returns the previous semester's book, he/she will not be allowed to issue the new semester's books. In this scenario, a defining loan period up to the next occurrence is more logical than defining the loan period in days.

In addition, reports available at the end of the day helps the librarian better monitor and verify circulation records and details of the collection of fines for overdue materials. Overall, the system has been found to be very user-friendly. Now, even semi-professionals working in the LRC are able to manage the circulation service, daily backup of the database, and even restoring data through pgAdmin3 (the GUI based administration window of PostgreSQL). Thus with a few staff, LRC is able to provide quality service to its patrons at the point of need.

From the LRC users' perspective, the majority of them have given a thumbs up for the availability of book jackets, Google preview (see Fig. 4B) in OPAC as this information is not available in the OPACs of the libraries of the elite, higher educational institutes in India like IITs, which they usually visit. From the users' feedback, it has been found that the image of the book jacket helps them to easily identify the book on the shelf. Google preview helps them to assess the quality and usefulness of a book to them. The most helpful and innovative feature as reported by the users is 'Other books in the rack' (based on class number clustering) (see Fig. 4C.), as it helps them greatly in quickly collecting the information about their interest.

Opinions of Workshop Participants

The author of this paper collected feedback from the participants of five different workshops viz. two workshops on Koha conducted by BIMTECH, Greater Noida, with resource person Dr. P. S.

Mukhopadhyay, a pioneer in the adoption and popularization of this software in India. One workshop focused on ABCD, also in BIMTECH, with resource person Egbert de Smet, the project leader of ABCD from Antwerpen University, Belgium, and two NewGenLib short term training programs conducted by NISCAIR(National Institute of Science Communication and Information Resources), New Delhi. It is important to mention that all the participants of the five workshops had prior experience with CDS/ISIS, WINISIS or some other available proprietary library management software.

It was found that only 5 percent of all the participants in two Koha workshops were able to install Koha independently. Interaction with them revealed that they had already installed Koha in standalone PCs in their workplace and started exploring Koha and attended the workshop for getting advanced hands-on knowledge from the expert. Remaining participants installed Koha from Live CD. Seventy percent of the total participants felt that installation and maintenance of Koha was a complex procedure. Forty five percent of total participants were able to set initial parameters through 'System Preference Admin' module of Koha with the help of a PowerPoint tutorial. Only twenty percent were able to use the cataloguing module in Koha since the interface displays MARC fields for data entry. Customization of the data entry template is not easily possible. In both of the Koha workshops, the resource person had to devote more than fifty percent of its total time to teach MARC21. A prominent reason for the weak performance in cataloging is that very few Indian LIS schools teach MARC format in detail.

About 75 per cent of total participants of the ABCD workshop were already using Winisis in their workplace and some were using WebLIS also. But, only a single participant was able to install ABCD as he had already installed and experimented with ABCD in the SAARC Documentation Centre, New Delhi. Eighty five per cent of the participants felt installation, customization and maintenance of ABCD were complex tasks, though ABCD uses the ISIS backbone. Thirty per cent of the participants in the ABCD workshopwho had attended workshops/training programs on Koha or NewGenLib earlier felt that ABCD gave much more freedom and flexibility to librarians in customizing the suite according to their needs as compared to other library management software. However, they felt that ABCD lacked effective

documentation in English, and also help from a large community of English-speaking users, as most of its users in the forum at isis-users@iccisis.org are non-English-speaking.

In the case of NewGenLib, 80 percent of the total participants of both of the training programs were able to install NewGenLib independently in the Windows platform, and 20 percent of them were able to install it on the Ubuntu Linux platform. It is important to mention here that the participants who were able to install NewGenLib in Linux had already installed DSpace in their workplace on the Linux platform. Both NewGenLib and Dspace use java and PostgreSQL, the two components which other participants failed to install. Seventy five percent of the participants were able to set up general set up parameters and cataloguing through predefined templates. Ninety percent of the total participants managed to use the catalogue import module by easily copying-pasting MARC records from the Library of Congress catalogue. About 20 percent of the participants felt that the set up parameter was a little complex, but almost every participant felt easy with Circulation and Reports modules as these modules require almost no customization.

Ten out of all of the participants who attended the workshops/training courses of the three softwares felt that NewGenLib was the easiest to handle among the three ILMS. However, Koha gave more freedom and liberty in customizing OPAC, report generation, and it was easy to internalize OPAC with the Indian Language. Easy configuration of associate libraries in Koha is another popular factor which NewGenLib lacks. Since all ten participants had already experimented with Koha and NewGenLib by then, they viewed t Koha's strong community of users, easy availability of Koha's documentation book by an Indian author (Mukhopadhaya, 2008), wide developers' base, and instant help from the community are the major driving force behind Koha's popularity in India. They feel that NewGenLib lacks easy customization of OPAC and a strong user base, as most of the queries were answered by its developer in the NewGenLib forum at http://forums.newgenlib.org/.

While discussing the user friendliness and ease of management with these three open source ILMS software, one participant used an interesting metaphor in comparing NewGenLib, Koha and ABCD. He was of the opinion that NewGenLib is like DDC, quite enumerative and easy. It can be implemented in the library without much technical expertise, and with a minimal training

program. Koha provides mixed freedom like UDC, as Koha provides more flexibility, but implementation requires some bit of technical knowledge as well as a good training and support system. ABCD is like CC with the most freedom and flexibility, and as with ABCD, a wide range of customization can be done but it requires thorough advanced technical knowledge, in depth knowledge of the ISIS platform, and a rigorous training program.

Observations/Suggestions

After using NewGenLib for more than three years in the LRC of IGIT, it is felt that it requires improvements in some areas.

a) OPAC: Though 'look and feel' of OPAC in the current version has improved substantially over the previous version, it needs more attention from developers keeping in mind the Library's user centered philosophy.

    i. It should be easily customizable as per local needs. For instance OPAC in Local Language, Institution Logo incorporation, mashing up with Google Maps, etc.[example Koha OPAC].

    ii. Bibliographical utility like 'List' for preparing a list of documents for a topic as seen in 'Koha'.

    iii. Spell checking features along with spelling suggestion as provided in Evergreen.

    iv. Usage based relevance results in OPAC.

    v. User generated tagging and comments like in Vufind**.**

b) More flexibility is to be provided for library staff for customizing different modules as per their requirements. For instance, in Report module, it is almost impossible to generate subject wise list of books in the Library or the usage statistics of different types of patrons (say faculty, students, etc). In binding management, bills can't be generated for a partial supply of bound documents (as per the work order) by the binding firm.

c) Configuration of associate library and provision for union catalogue.

Goals for the future

Interaction with the developer by E-mail reveals that the development of version 3.0. 4 is underway. They planned for about six updates/ release for 3.0.4 version- including three major releases and three minor releases- with bug fixes and minor enhancements.

- 3.0.4 Release 1 - Was recently released.. Its emphasis is mainly on OPAC with minor bug fixes. It includes Web 2.0 features in OPAC like tagging, user review, etc. It uses the Freemarker template engine for OPAC. Thus, customization of OPAC seems to be easier. The developer has the view that the new OPAC will be more efficient and faster than its predecessor. But, it has not been tested by the author.

- 3.0.4 Release 2 – will emphasize mainly the Acquisition Module along with the associated Reports module. To make the Acquisition module more user-friendly, efficient and better in terms of workflow communication, the developer has already requested its users to send them feedback and suggestions.

- 3.0.4 Release 3 - will be devoted for updating the Serials Management module and associated Reports module.

The time interval between each release is targeted to be about two and half months. Post 3.0.4 final release, the development of Version 4.0 will start. The developer is quite ambitious about Version 4.0 with the goal of a completely web-based librarian interface along with a hosting model on the cloud as a free-to-use service.

Conclusion

Use of robust technology, open standards and well designed system analysis has made NewGenLib a highly capable, flexible, user-friendly library management software. The context sensitive help provided with every window, and its self-explanatory style have made NewGenLib a very useful ILMS which can be easily implemented in a library without help from computer specialists. As has been seen from the number of downloads and increasing number of participants in the forum, its popularity is increasing gradually. But, it deserves much more attention from the international library community as a complete enterprise class library management solution. It will be beneficial to build several additional applications and improvements incorporating the new information technologies that will be coming into the field at this time so that it will continue to be relevant and highly useful to meet the changing requirements of its target users. In general, the success of an OSS project largely depends on the support it receives from the international community for its continuous improvement and further development. The level of involvement of users in submitting bug reports and participating in the project's mailing lists and the number of developers around the project are also major factors for

its continuing success (Crowston, et al.). It is true that the developer has instituted several initiatives like the NewGenLib adoption program, offering free data conversion, maintaining a dedicated OSS team for providing quick responses to user queries, and so on. But all the developmental work is done only by the original developer (i.e., Verus Solutions), and there are hardly any external developers for NewGenLib. In India, it is found that we are good at adopting OSS in our libraries, but we are lacking in contributing to the code base of the OSS, as most libraries hardly have any dedicated IT experts. It is hoped that the international community in the field will gradually come forward and keep adding new capabilities and applications to this ILMS software.

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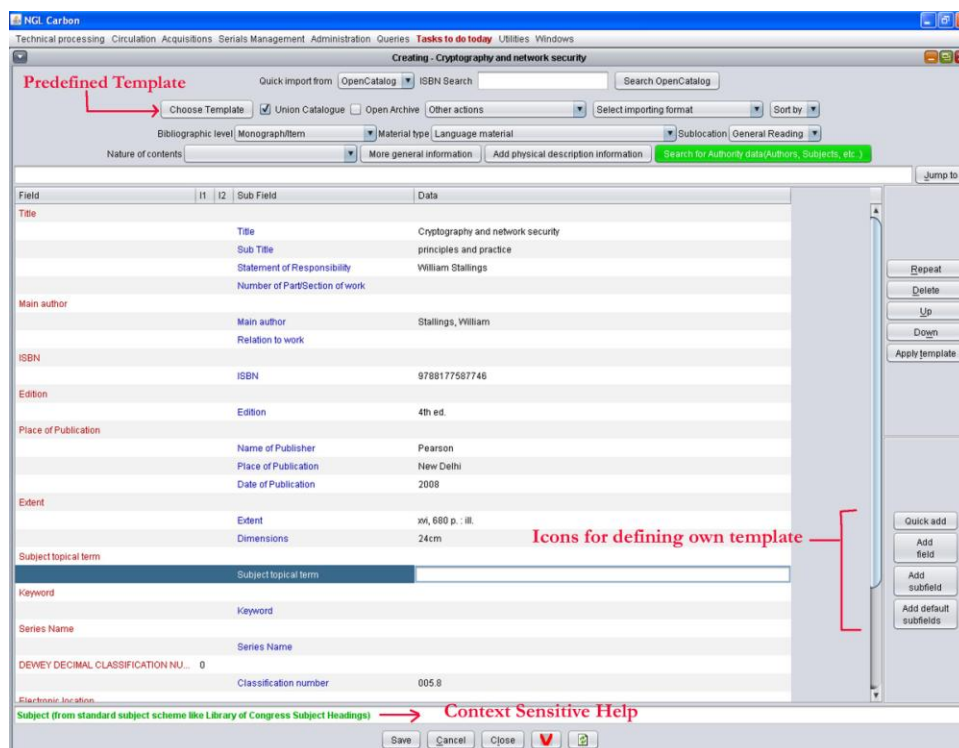
Fig. 2: Cataloguing interface
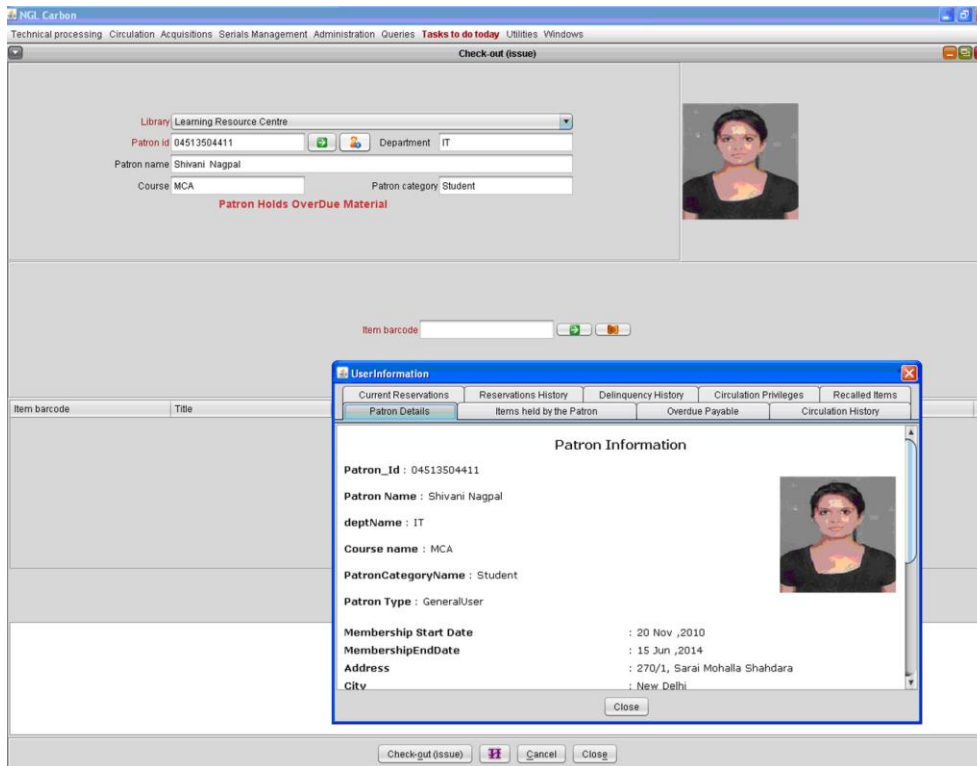
Fig. 3A:Circulation- Patron Information
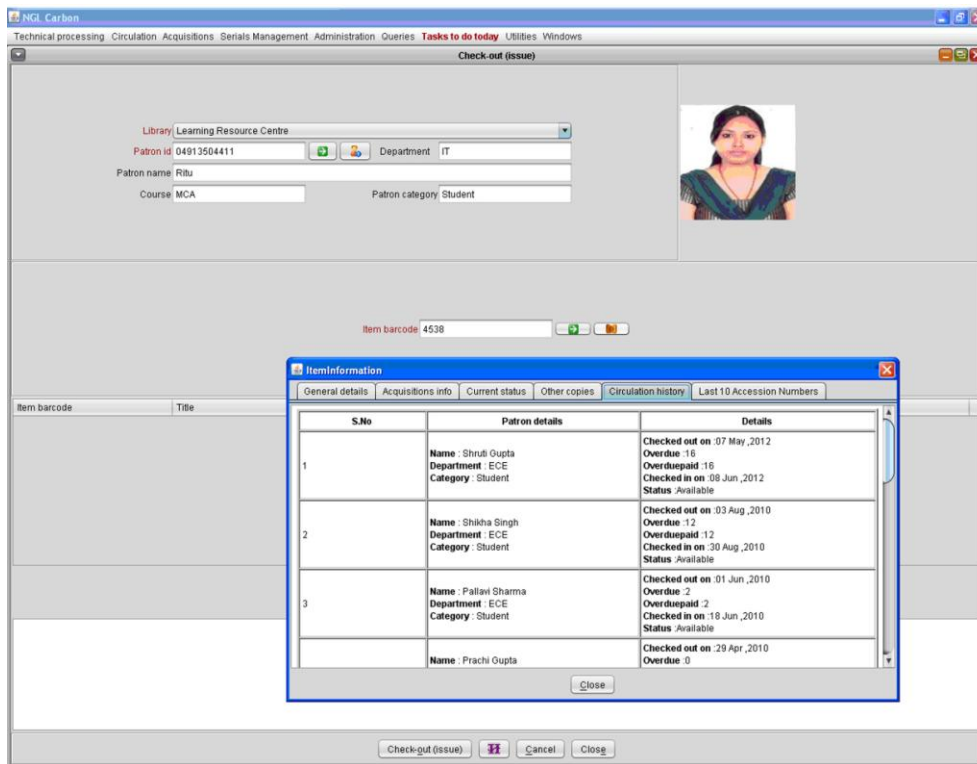
Fig. 3B:Circulation- Item Information
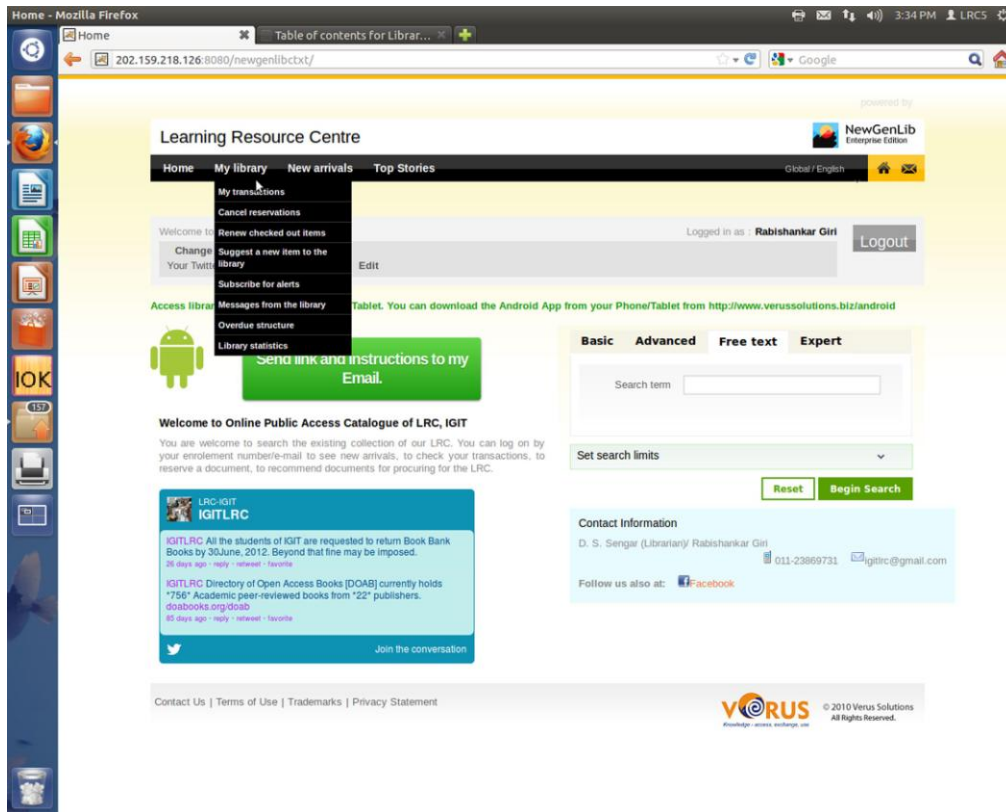
Fig. -4A OPAC home page

Fig. 4B - OPAC search results

Fig. 4C - OPAC item details and suggestion