OPEN SOURCE LIBRARY MANAGEMENT SYSTEMS: A SURVEY AND PRESENT DEVELOPMENTAL STATUS

Mr. Nagesh L. Londhe
Assistant Librarian, Jayakar Library, Savitribai Phule Pune University,
Ganeshkhind Road Pune, 411007.

Dr. Suresh K. Patil
Professor and Librarian, Symbiosis International University,
Gram: Lavale Tal: Mulshi Dist: Pune Pin 412 115,

ABSTRACT

The present article surveys the open source library management systems and finds the present developmental state of these LMSs by studying release activity and community activity (“mailing list/discussion forum activity). A survey is carried out by using various available open source software related sources. The technical information about all these systems is collected and critically examined. Thirty-one open source LMSs are found in this survey. Out of 31 open source library management systems projects only 50% are currently in active state. This is one of the comprehensive survey covering maximum open source library management systems.

Keyword: Open source software, Library management system, Integrated library system, Survey, Developmental status

1. INTRODUCTION

Since the year 1999, the era of open source library management systems (LMS) has begun by the introduction of Koha, the first open source library management system. Since then, the growth of open source library management systems has flourished. Today, number of open source library management systems are available. Moreover, there has been
continuous development in the open source library management systems. This paper attempts to make an up-to-date comprehensive survey, critically examine and find actual state of development of open source library management systems. For this purpose, detailed information about the open source library management systems has been collected and studied.

2. LITERATURE REVIEW

The researcher has made extensive literature survey on the topic under present study. There are number of papers on different aspects of open source software, such as, evaluation, case study, implementation, comparison etc. However, the purpose of present research article is to focus on the notion of survey of open source library management systems and find development activity only. In order to bring rigor into argumentation, the present study is exclusively concentrated on open source LMS related research articles and the articles listing, describing and critically analyzing open source library management systems. Following are some of the studies, which are delineated as follows:


Breeding, M. (2002) provides the information about Koha, Learning Access ILS, and Avanti Micro LCS Integrated Library system. Boss, R. W. (2005), in his article provides criteria and on the basis this criteria he has evaluated 12 open source library management systems, such as, Avanti Micro LCS, Emilda, Evergreen, Firefly, GNUteca, Koha, Learning Access ILS, Openbiblio, PhpMyLibrary, PMB, PYTHEAS and WEBLIS.

Breeding, M. (2007), in his article, provides up-to-date information about Koha Evergreen and learning access ILS, integrated library system. The author gives comprehensive information about latest developments in software since 2002.

DeVoe, K. (2007) provides a brief overview of nine open source integrated library. The author also put focus on the apparent advantages of open source software over commercial software, as well as its potential disadvantages.


Balnaves E. (2008) has evaluated seven open source library management systems, such as, Emilda, Evergreen, Gnuteca, Koba, Open Biblio, Php My Library, PMB on five dimensions like functional dimension, architecture dimension, community dimension, code dimension, and schema dimension.

Breeding, M. (2009) focuses on questions regarding to what extent open source ILS products can be considered viable alternatives. He looks open source ILS viability from four perspectives: market acceptance, support options, product development and functionality, and risk factors

Müller, T. (2011) has identified 20 open source integrated library systems in his article and analyzed these systems using three-step process, such as, licensing, community and functionality. Among these, only three systems such as Koha, Evergreen, PMB passed three-step process.
Sunil M. V. and Harinarayana, N. S. (2011) has presented the requirement of Indian college libraries in integrated library system and evaluated nine open source library management softwares, such as, ABCD, Emilda, Evergreen, Koha, New Gen Lib, OPALS, Open bibilo, PMB and PhpMyLibrary against the listed criteria from college library perspective.


3. OBJECTIVES

The present study attempts to fulfill the following objectives:

- To survey of the open source library management systems projects.
- To critically examine and find their state of development by studying release activity and community activity

4. SURVEY

To fulfill the first objective a survey is carried out. For survey, different sources are consulted such as Sourceforge.net (http://sourceforge.net/), FOSS4LIB (https://foss4lib.org/), GitHub (https://github.com/, OSS4Lib (http://www.oss4lib.org/), Savannah (http://savannah.gnu.org/), Library and information science literature, Free software directory etc. Detailed information about these software is collected and studied. The survey reveals that there are thirty-one open source integrated library management systems. Out of these thirty-one systems, two are e-book management systems. A detail critical analysis of each system is as follows.

5. LIBRARY MANAGEMENT SYSTEMS

5.1 ABCD

The ABCD stand for "Automatización de Bibliotecasy Centros de Documentación" (in Spanish), which means: Library and Documentation Centers Automation. Its development is promoted and coordinated by BIREME with the support of VLIR.

ABCD is web-based integrated library management software. Any number of new databases can be defined in this software. It is compatible with CDS/ISIS database technology for the bibliographic databases. This Software is having acquisition, cataloguing, circulation, OPAC and serial control module. It is available in Spanish, English, French and Portuguese languages and it can be translated into other languages. (ABCD, n. d.).

There have been only five releases during September 2008 to Oct. 2014. This shows that the rate of release activity of this software is relatively slow. Presently the http://abcd.netcat.be site provides up-to-date information as well as documentation. It is found that most of the links of wiki page of ABCD are not working.
The mailing list shows considerable activity of user community. This also shows that number of people is using this software. Overall, it can be said that user community of this project is active and the release activity is moderately slow.

5.2 Avanti Micro LCS
Avanti Micro LCS is an OPAC and cataloging system. It is written entirely in JavaScript. It is platform independent and runs on any computer that supports Java. Its user interface provides entire Boolean search capabilities with AND, OR and NOT operators, nested searching and searching across all indexed fields. It is configured to catalogue and search up to 16,000 titles and 32,000 items (Avanti, n.d.).

This system is released under GNU General Public License. It has been designed for the use in small libraries. The source code and documentation is available on http://www.avantilibrarysystems.com/microlcs.html. However, at present (November 2014) this page is not accessible.

There have been six versions of this system since its release of version 1.0 beta 1 in 2003. There was good development activity in this project up to the year 2007. The last release is 1.0.2 and it is released in 2007. It seems that there is no update since 2007. Mailing list and discussion forum for this project is not found. Presently, the website of this project is not accessible. The above fact shows that project is in inactive state.

5.3 BibioteQ
“BiblioteQ is a professional cataloging and library management suite, which utilize a Qt interface and provide connectivity to PostgreSQL and SQLite. The SRU and Z39.50 protocols are used for retrieving data for books, journals, and magazines. This software is available for all major operating systems and should be compatible with any system that supports Qt. (BiblioteQ, n.d.). This software consists of cataloguing, circulation and OPAC module. This software has Desktop version and online version. The desktop version contains cataloguing and circulation modules. The online version is OPAC. The online version needs to be integrated with desktop version by making some changes in the configuration files. This software is unique in using QT. The desktop version of this software is easy to install. For Windows, installer.exe file is available. This software is also comparatively easy to install in Linux (Ubuntu) environment.

This software is also very easy to use. This software is suitable for small libraries. The circulation functionality of this software is very limited. There is a need to add some more functionality in this software.

Its latest desktop version is released in Dec. 2014. The development team of this software is very active. Since release of pre alpha version in 2007 to December 2014, 129 versions have been released. This shows that development activity of this software is good. Community activity also shows interest of some users in this software. Though 129 version of this software are released but with minor changes.

5.4 Emilda
Emilda is an integrated library system that consists of the features, such as, an OPAC, circulation and administration functions, Z39.50 capabilities and MARC compatibility. MARC compatibility is achieved using Zebra in conjunction with MySQL. The system is released under GNU General Public License version 2.0 (GPLv2). It is operating system independent (Emilda, n.d.). In the beginning, this software had shown good development.
The release activity shows that since June 2005, there have been no further releases, which shows that there is no development in this project. The project website, http://www.emilda.org is not accessible. The mailing list shows that since 2007, there has been no discussion. The above fact clearly indicates that the project has become stagnant. However, the sources forge site shown 8 weekly download.

5.5 Espabiblio

This is an integrated library management system, which is based on OpenBiblio 7.1. Some of the new feature added in this system are, presentation of cover images, display photos of members, implemented search via Z93.50, ability to upload and download digital materials and other minor changes.

This is an automated library system, which contains OPAC, circulation (loans), cataloging, administration, and reports. It is also having CMS based on Word Press. It supports any operating system with Apache, PHP and MySQL. It is released under GNU General Public License version 2.0 (GPLv2) (Espabiblio, n. d.).

This software is a modified version of OpenBiblio for use in Spanish-speaking countries. Its old versions are not available on sourceforge.net; however, the Wikipage shows that there are versions 2.0, 2.1 and 2.2 as intermediate versions. This means that there are four versions from 2.0 to present version 3.2. The latest version shows 18 download per week. The project site shows information about version 3.3 but same is not available for download on sourceforge.net. No mailing list is found but discussion forum is available.

The release activity of this project is good. It shows active development in this project. The community and support activity is relatively weak. However, overall the development of the project is good.

5.6 Evergreen

The Georgia Public Library System initiated the Evergreen project in 2006 to serve need for a scalable catalogue shared by more than 275 public libraries in the state of Georgia. Evergreen has acquisition catalogue, circulation, serial and OPAC functionality. It is highly-scalable software. The project has been designed to meet the needs of the very smallest to the very largest libraries and consortia.

The Evergreen development community is still growing. The Evergreen community is also marked by a high degree of participation by the librarians, who use the software and contribute documentation, bug reports, and organizational energy. It is based on a robust, scalable, message-passing framework – OpenSRF (Evergreen, n.d.).

There are 16 releases from September 2006 to December 2014, which means there have been 2 releases per year. This shows that the release activity of this software is excellent. The software has a large number of mailing lists with considerable activity. This means that project has strong developer and user community.

This project provides detailed official documentation. As well as there are number other sources, such as wiki. The wiki provides detail information about software. The institutional support is available for this software. There are several companies offering migration, support, hosting, and development services. All above facts shows that the project has a good number of users. These facts show that project is in active state.
5.7 FireFly

FireFly is a public library system. It is written in Python, Perl, with all data stored in XML. The driving force behind this project is to give public libraries free software set to run and maintain library systems. It is released under GNU General Public License version 2.0 or later. This project was registered on Savannah on 3 March 2003 (Firefly, n.d.). Firefly began to operate in the year 2002 as an integrated library system for public libraries (Boss R.W., 2005).

It is observed that there have been 86 messages in the mailing list from March 2003 to July 2003. At present, there are no source code files available on the project website. The maintainer of this project posted following last message:

“I will be leaving FireFly at the end of July to work on the Koha project. It is another OSS LIS, is more established. It has become what I wanted FireFly to be. I will be joining their team at the beginning of August.”

The above facts reveal that this project is inactive and abandoned

5.8 Glibms: GNU Library Management System

Glibms is library management software developed using PHP and PostgreSQL to automate different activities carried out in the library. This software is released under GNU General Public License (GPL) (Glibms, n.d.). Its first version released in the month of October 2001. The latest version is 0.0.7, which is released in February 2002. It seems that there is no development since 2002. The description of software, such as, functional features is also not available.

The first version was uploaded in 2001. Since the release of 0.0.7 version in the year 2002, no further versions released. Altogether, there were three versions released from 2001 to 2002. The developer and general mailing list have zero post. The glibs people list has 939 posts, but in this list most of the posts are not related to this software (SPAM). Only installation documentation is available. The project website also gives very basic information. From the mailing list, it seems that presently there is no user and developer community for this project. These facts shows that project is in inactive state

5.9 Gnuteca

“The Gnuteca is a system for automation of all processes of a library that supports most of the popular patterns used in libraries, such as, ISIS and MARC21. Since it was developed in CDS/ISIS environment, Gnuteca provides easy migration of collections of this type of database and several others. The Solis, Cooperative Free Solutions has developed this system.

The Gnuteca is a system for automation of all processes of a library, regardless of the size of the collection or the number of users. The system has created according to the criteria validated by a group of librarians. This system is in operation, in Univates, the university center, since February 2002 (Solis, n.d.). It has all functionalities, which are required by the most of the libraries. Its community data shows large number of members. The version history of this project could not be traced.

5.10 GPL Library System

It is an integrated library management system released under GNU General Public License version 3.0 (GPLv3)
Its 3.0 version released in June 2010. After release of this version, there were no further releases. The details about functionality feature are not provided but the code and screenshot provided in wiki page show that it is has catalogue, OPAC and basic circulation modules. (GPL Library System, n.d.).

This project is registered on sourceforge.net in Jan 2010. It seems that initial development of this project was good. Its 3.2 version released in July 2010. Since then there has been no development in this project. The mailing list and discussion forum are not available. The above fact shows that project is in inactive state.

5.11 InfoCID

INFOCID Library is a system developed with PHP and Postgres with a simple and intuitive (for both the user and the administrator) dimension. It offers modules such as, administration, consultation, loan repayment, statistics, and inventory management (InfoCID, n.d.).

This project is in Spanish language. The project was uploaded on sourceforge.net in March 2005. Since then there are no further releases and the support information such as, mailing list, wiki, discussion forum is not available. The mailing list shows zero post. The links on project website are not active. This shows that presently there are no developments in this project.

5.12 Java Books Cataloguing System

“The purpose of this software is primarily to create a Book Catalogue using barcode data from the freely available cuecat (tm) bar code reader. It is merely a cataloguing module. It is released under GNU Library or Lesser General Public License version 2.0 (LGPLv2)” (Java cataloguing system, n.d.).

The release activity of this project shows that since its second release in 2000, there has been no further release. There has been no developments in this project for the last 14 years. The support such as mailing list, discussion forum is not available.

5.13 Jayuya

Jayuya THEY is an Integrated Library Management System. This covers the features such as catalogue, circulation, management regulation of the library, generating a set of statistics on the transactions.
The fundamental concept behind Jayuya THEY is “profile cataloging”. This system is in French language and released under GNU General Public License (GNU GPL) (Jayuya, n.d.).

From the project site, it seems that there has been no development in this project since May 2005 i.e. for the last 9 years. It is also found that the support information such as, mailing list, forum is not available.

5.14 Kuali Open Library Environment (OLE):

“Kuali OLE is the first system designed by and for academic and research libraries for managing and delivering intellectual information. This project has been supported by many renowned organizations such as, Kuali OLE founding partners (15 Universities) and the Andrew W. Mellon Foundation.

It is an enterprise-ready, community-source software package to manage and provide access to not only items in your collection but to license and local digital content.
It is released under The Educational Community License Version 2.0 (Open source Initiative). It has the following modules:

**Select and Acquire:** It consists of financial, selection, acquisitions, receiving, payment/invoicing, licensing, and Electronic Resource Management (ERM), components that support operational processes for demand-driven acquisitions of library resources.

**Describe and Manage:** Cataloguing. This interface allows library staff to create and manage core metadata related to library resources, such as, bibliographic data, localized holdings, and electronic resources access information.

**Deliver:** Circulation. The features available in this module are patron records, item records/fast adds, circulation desks, loan/renewal, return, requests, notices and other batch processes, “My Account” features for patrons, billing for lost items, overdue fines, other charges etc.

**System Integration:** System Integration is a link among the modules, such as, select and acquire, describe and manage, deliver, and Kuali rice. (Kuali foundation, n.d.).

The development of this project has begun in July 2010. The first public version was released in November 2011.

The release activity shows that the development activity is very good. The community activities of this project is little bit small as it is recently started. It has a strong organizational support. This software had implanted features of next generation library system.

### 5.15 Kobli Koha

It is an integrated library management system (ILS), which is based on Koha. It was developed by Working Group impulse of Bages (Libraries of the State General Administration –Spain) (Ministry of Education, Culture and Sports) (Koblikoha, n.d.).

Kobli is a customized Spanish version of Koha by adding up some additional features, for example, digital repository, some improvements in cataloguing module etc. Its 1.4 version was released in June 2011 and latest version 1.12.4 in 2013. This system consists of the modules, such as, administration, cataloguing, circulation, OPAC, Serial etc.

There have been five releases since the release of its version 1.4 in June 2011. This shows that the release activity is good. This software has an institutional support. The large number of posts in a mailing list shows that there is good activity in the community of this project. Above facts shows that project is in active state

### 5.16 Koha

Koha is the first open source integrated library system. It is used worldwide. Katipo Communications created Koha in 1999 for the Horowhenua Library Trust in New Zealand. (Koha, n.d.). “Koha is a true enterprise-class ILS with comprehensive functionality including basic or advanced options. Koha includes modules for circulation, cataloguing, acquisitions, serials, reserves, patron management, branch relationships, and more.”

Koha is full-featured ILS, multilingual and translatable, library standards compliant, web-based. It has full text searching capability. Koha is built using library standards and protocols that ensure interoperability among Koha and other systems (Koha, n.d.).

The release activity of Koha is very strong, as its code has been developed in the open framework and from multiple developers all around the world. This code is separated into adding new features, and fixing bugs. It has bug fixed release in every month and new features release in every six months.
This project has a number of forums and mailing lists and a huge number of messages on the forum and mailing list are posted. This shows that a large number of individuals and institutions are using this software and involved in the development of this software. The numbers of companies also provide paid support for this software.

This software has a strong base of development and support teams. However, there is a need to take advantage of these teams to make this software next generation ILS by adding more advanced features, such as, E resource management, digital collection management, discovery, and federated search services etc.

5.17 Librarian DB

Librarian DB is a simple web-based library management system that keeps a track of the books in a library. It permits adding/deleting/updating/searching. It seems from the screenshot and description of the software that it has Catalogue and OPAC Modules (Librarian DB, n. d.). It is in English language and released under GNU General Public License version 2.0 (GPLv2). It has very limited functionality features.

Its first version librarian db 0.1 released in May 2007 and latest version librarian db-0.3.3 released in January 2014.

The release activity shows that there have been eight versions during 2007 to 2014. This shows that development process is continue. Discussion forum is available.

5.18 Library Manager

Library Manager is a library management program. The information about functional features is not found. However, it seems from the code that it has only limited functionality, such as, basic catalogue, basic search (OPAC), basic circulation. Library Manager is released under GPL License (Library Manager, n.d.).

Since 2002, there have been no further releases in this project. The support information for this project, such as, mailing list, discussion forum is not available. This shows that this project is inactive or abandoned.

5.19 Mini SOPULI

It is a basic version of SOPULI (Software for Public Libraries). It is a software for small public libraries.(51) It is in English and Italian languages and released under GNU General Public License version 2.0 (GPLv2). It is written in Java, PL/SQL, Python (MINISOPULI, n.d.). The project is available on http://sourceforge.net/projects/minisopuli. However, source code files are not available for downloading. The discussion forum and mailing list are also not available. When checked this link again on 25 December 2014 the website page was not available. The above fact shows that the project is inactive.

5.20 New Gen Lib

“NGL is an outcome of collaboration between Verus solutions and Kesavan Institute of Information and Knowledge Management. (Verus Solutions, n.d).

It has acquisitions, technical processing, serials management, circulation, administration, MIS reports, OPAC functionality. Its 1.0 version released in March 2005 and on 9th January 2008, New Gen Lib was declared Open Source Software (Wikipedia, n.d., 11). It supports Windows, Linux and available in multi language. It is released under GNU and GPL.
This software covers all necessary models for the library automation. This software having institutional support. Since its 3.0.2 version, which is released in June 2011 to the latest version, 3.0.4 R3U1 of Nov. 2014, there have been 18 releases. i.e on an average 6 releases per year. The release activity shows continuous development in this software.

This software has also commercial support and free support in the form of mailing list. The community activity of this project is good. Detailed documentation, Knowledge bank etc. are available. All above facts show that this project is having excellent development activity.

5.21 Next L Enju

This software is developed by Project Next-L (Japan). This software has following modules, such as, cataloguing, patron management, circulation, OAI-PMH provider, reference management, import and export bibliographic records (CSV/XML)It is released under MIT License. The project is named as -

Next-L Enju Root : Bibliographic data management System
Next-L Enju Leaf : Integrated library system

The release activity of this project shows that there have been 47 releases in three years span, which means 15 releases per year. This project is also having institutional support. This project shows excellent release activity. Documentation and community support is also available. The project is in active state.

5.22 Open Marco Polo

This software works entirely on Isis databases. It is having cataloguing, OPAC, circulation functionalities. Its last version released in 2008. It is released under LGPL (GNU Lesser General Public License). It is developed by The National University of Entre Ríos (Open Marco Polo, n.d.). It works entirely on Isis database, thus enabling full compatibility with MicrolIsis or WinIsis. It is in Spanish Language.

It seems from project site that since 2008 there is no further release of this software. Only Windows exe of the present version is available for download. There is no information about community and support, such as, mailing list, forum etc. The above facts show that there is no development for a long time in this project.

5.23 Open Amapthèque

It is based on a web architecture, using PHP / MySQL platform technologies. It was specially designed to manage documentary collections and publications within research structures. It is intended for scientific and technical information staff in laboratories, and for library users.

It has all the usual functions of an integrated library management systems such as, cataloguing, document circulation management, budget monitoring, etc. In addition to the usual features, other features, such as, management of internal publications, easy integration of internal publications on internet and intranet portals, bibliographical reference format etc. are also available. This software is in French language. The discussion forum shows very little activity. Following downloads and documentation links are not working. Other alternative sources of download are also not found. (CIRAD, n.d.). Therefore, it is not possible to find status of this software.
5.24 OpenBiblio

OpenBiblio automated library system has been developed in PHP. It has modules, such as, OPAC, circulation, cataloging, and staff administration. Its latest version was released in August 2014. This software is released under GNU General Public License version 2.0 (GPLv2). It is in English language. Espabiblio is a Spanish language version of OpenBiblio.

The current version has been released in August 2014. It shows 282 downloads per week. The release activity of this project is good, which shows on an average one release every year. However, version 0.7.1 took a long time for its release. The development team is having good number of members. The activity on forum shows that community is active and this project is widely accepted (OpenBiblio, n. d.) The above facts show that development activity in this project is good.

5.25 OtomiGenX

It is a library automation system based on PHP and MYSQL. Its last version was released in August 2009. It is in English and Indonesian languages. It is released under GNU General Public License version 2.0 (GPLv2). It has catalogue, search and loan modules. (OtomiGenX, n. d.)

The version 2.2 and 3.0 are available for downloads on sourceforge.net. The information about previous versions is not found. Since August 2009, there have been no further releases. This shows that presently there is no development in this project. This project also does not have support information, such as, discussion forum and mailing list etc. The above facts show that the project is presently inactive.

5.26 PhpMyLibrary

PhpMyLibrary is developed using PHP and MySQL. This system has modules, such as, cataloging, circulation, and the web OPAC and import export features. This software follows the USMARC standard for adding materials. This software supports English, German, Indonesian, and Spanish languages (PhpMyLibrary, n. d.). Its last version was released in April 2006.

From its release activity, it seems that there is no further release for the last eight years. This software has shown an excellent development activity up to 2006. However, for last eight years there has been no development in this project. The mailing list shows some activity but it is found that most of the posts are spam and they are not related to the software. The forum activity is also very low.

5.27 PMB PhpMyBiblio

François Lemarchand, Director of the Public Library of Agneaux, initiated this project in October 2002. It is now maintained by PMB Services (French Company). This software is having various modules, such as, circulation cataloguing, reports SDI, administration, acquisition etc. This software supports English, French, Spanish, Italian, Arabic, Dutch and Portuguese languages. PMB was initially licensed under GNU General Public License. Now it has been licensed under CECILL free license, which ensures legal security in France and
other countries with similar legal systems. It supports Linux, Windows, Mac OS (Wikipedia, n. d., 28).

There have been six releases within a period of less than two years. This shows that the release activity of this project is excellent. This project is supported by professional organization. This software is having mailing list, documentations, and paid support etc. The community activity of this project is also excellent. These facts reveal that the project is active.

5.28 GPL Library Loan Management System

GPL library loan management system is intended for small libraries, which provides facilities for managing all features of a library, such as books, videos, audio, and periodicals in the library, loan tracking, and mail merge. Planned features include XML support, web access (GPL library loan management system, n. d.).

Its last version was released in 2001. After this release, no further development has taken place. The only one version was released, which had been released under GPL. However, no details about the license are found. There is no activity in community also.

5.29 SLiMS (Senayan Library Management System)

It is web-based Open Source Software (OSS). It is full-featured library automation system having modules, such as, bibliography (cataloguing) membership, circulation, stock taking, reporting, serial control, OPAC, etc. SLiMS is multi-platform software, which means it can be run natively in almost all operating systems, which support the programming language PHP. This software is multilingual (Senayan, n. d., 39).The release activity of this project shows that the development activity in this project is very sound. After its first public release in March 2008 to November 2013, there have been 17 releases. It’s easy installable portable version and detailed documentations is available. The community activity of this project is also very good.

5.30 Calibre E Book Management System

Calibre is a free and open source e-book library management application developed by users of e-books for the users of e-books. It has varied features divided into the categories such as Library Management, E-book conversion, Syncing to e-book reader devices, Downloading news from the web and converting it into e-book form, Comprehensive e-book viewer, Content server for online access to your book collection, E-book editor for the major e-book formats.

“This system has almost half dozen developers, several testers and bug reporters. It is used in more than 200 countries and has been translated into a dozen different languages by volunteers” (Calibre, n.d., 74).

The number of releases shows the sound state of release activity. The community also looks very active. Total threads on forum are 12,635 and total number of posts on this forum is 99,247. It is released under GNU GPL version 3. All above information indicates that this project is active.

5.31 e-Library

It is e-books library organizer. It has different facilities like catalogue, tag and search book database. It also automatically fetches the book's details and cover image from the web with a smart ISBN guesser. Its latest version was
released in October 2009. This program supports English and Polish languages. (eLibrary n.d., 46). For last 3 years, there has been no further release; however, forum shows latest activity.

6. OTHER LMS

6.1 OPALS
This software has all required functionalities, and it is released under GNU General Public License. However, its code is not publicly available on the internet. The user needs to send mail for obtaining source code. The website mentions that there is no up-to-date installation manual (OPALS, n.d., 60).

6.2 Weblis
It consists of the modules, such as, cataloguing system, OPAC, LOAN module, and statistical module. Its last version was released in 2005. WEBLIS is a freeware (UNESCO, n.d.).

There are also following library management software. These are listed in literature/website as open source software but the information about open source license under which they are released is not available.

6.3 Pytheas
PYTHEAS (Powerful Yet Tactfully Helpful Electronic Arranger of Sources) is designed as a multi-tier ILS (Integrated Library System) or Library Application Framework (Pytheas, n.d.). However, at present very less information is available about this system.

6.4 Learning Access ILS
The Learning Access ILS consists of four modules: viz. the patron or user module (Web OPAC), the cataloging module, the circulation module and the administrative module. On project website, it is mentioned that it is available at affordable cost. (Learning access institute, n.d.). Some of the articles have listed it as open source. However, the source code is available for downloading.

6.5 Mylibrarian
Its Version 1.0.8 was released in January 2002. Since then no further versions have been released. There is no any support for this software, such as, mailing list, discussion forum etc. Project site does not provide information about license, under it is released. My librarian (n.d.)

7. CONCLUSION
This study covers thirty-one open source library management systems projects, which are developed during 1999 to 2014 and tries to present the state of development. Researcher has also attempted to present historical overview of development and update picture of library management systems. This is one of the comprehensive up-to-date survey. This study reveals that only fifteen LMS projects shown recent activity in community and their releases. Fourteen projects does not shown any activity for than four year since their last activity
(release and community) upto the date of data collection (Dec. 2014). Two-projects developmental status could not be determined due to unavailability of data.

This study reveals that maximum number of active projects is having an institutional support. This study also reveals there are considerable number of weekly downloads for old releases of some inactive state projects.

There is further need to investigate why some projects are abandoned, and their challenges, what measures taken by active/success projects to sustain.

8. REFERENCES

49. OPALS (n. d.), available at: http://www.opals-na.org/ (accessed on 8 November 2014) 1