

Open Source Software for Library System: An Overview

Abstract

The success of any library depends to a large extent, on the efficient and effective organization of various house-keeping activities. Some of the important house-keeping activities associated with any modern library comprises of acquisition, technical processing, circulation control, reference service and serial control. Earlier, these activities were carried out manually but today they are carried out with the help of computers. There are number of software packages which are used to accomplish these activities. In the present paper an attempt has been made to highlight brief concept of Open Source Software (OSS) .It also discusses an overview of various features and modules of open source softwares which can be used to improve the library services and management skills significantly. It further states various advantages and dis-advantages of OSS.

Keywords: Information Technology, Open Source Software, Features and Modules of OSS.



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Introduction

Information technology enables libraries to provide most efficient and specialized information services. Automation has helped libraries in improving library operations and accelerating their working efficiency. Use of modern information technologies has profound influence on the usage and reference pattern in libraries resulting in new type of demands and services. A variety of advantages can be derived by the appropriate use of IT. In certain nature of jobs, hours of manual work are completed within minutes through IT. Perhaps, there may not be any area of operation or service where one cannot apply IT. Technological innovations in the field of Library Science have affected a wide spectrum of library operations and information services. There are number of software packages which are used to accomplish these activities. These softwares allow in completing more tasks with greater accuracy and better quality in less time for lower costs. It could lead higher productivity, better image of the library, improved response time or improving staff morale and motivation. Software is a generic term covering the concepts, procedures and instructions which enable computer systems to do useful things. Usually, software is conceived in terms of computer programs, discrete units of software which make the computer to carry out specific tasks, and or systems or packages. The importance of software is obvious, since it is the software which applies the power of the computer to solve the users' problems.

Objectives of the Study

1. To study the basic concept of Open Source Software.
2. To study various modules and features of open source software.
3. To know various advantages and dis-advantages of Open Source Software.

Review of Literature

There is no paucity of literature pertaining to open source software in libraries. Some of the worth mentioning studies which are reviewed are as follows: -

Vimal Kumar (2007)¹ states that library professionals should be aware of various advantages of open source software. They should have basic knowledge about the selection, installation and maintenance. Various problems pertaining to selection, installation and maintenance of open source library software are also highlighted in the paper.

According to Randhawa(2008)² open source software is a extremely powerful solution that may perhaps be used to create a resourceful library to a large extent . Highlighting the importance of open source software it is said that by using it in the library, money that otherwise would be spent on software solutions can be used for other important resources, such as purchasing additional media resources (books, journals, etc.), or can be used to hire educated, technical support that provides patrons with the know how to better use already existing resources. Moreover it can be constantly updated, changed, and customized to meet the library's needs.

Dhimam and Yashoda Rani (2012)³ states that the implementation of open source software in libraries represents a method for improving library services and collections. It gives library staff an option to be actively involved in the development projects. Libraries adopting OSS will need to provide their staff with additional development and training to enable them to take on these new roles effectively.

Salve, Lihitkar and Lihitkar (2012)⁴ in their paper stated that OSS is an ideal software for libraries as it is more reliable ,flexible and can perform better .Moreover there is no dependence on vendor or producer.

Jasimudeen ,Vimal Kumar and Biju (2014) ⁵, in their paper analyzed that library professionals showed a positive attitude towards the acceptance of OSS. The study also revealed that the orientation programmes must be conducted so as to make Library Professionals aware of use of Open Source software in libraries.

Ray and Ramesh (2017)⁶ in their paper have stated that the rapid growth of the OSS has provided huge opportunities for the library professionals. It is further indicated that the implementation of OSS provides many advantages and is a powerful OSS solutions available to serve different functions of the library. Mainly money can be saved by using these OSS in the libraries and this money can be used for the purchase of other purposes of the library. As the library professionals in India are aware of implementation of OSS in libraries, therefore, the use of OSS in libraries is rapidly gaining its popularity among the library professionals for which they also attend various training workshops.

Chauhan (2018)⁷ in his paper indicated that in O.P. Jindal University, Sonipat library, KOHA Library Software is used for its activities and services. The findings revealed that majority of Library staff feels that due to lack of training they have to face various problems in operating KOHA library software. It is suggested that for the proper use of KOHA software various workshops, seminars and orientation programmes for library professionals should be organized and it should be mandatory for staff to attend these programmes for proper benefits and outputs of KOHA.

Kampa and Kaushik (2019)⁸ in their paper analyzed that in the libraries of Institutions of National Importance (INIs) ,about 18.4% use and adopt OSS in integrated library system (ILS) while 95.2% in digital repository and 65.5% library

website. Koha, DSpace, and Drupal are the most favoured OSS among the libraries of INIs.

Brief Concept of Open Source Software

Software is a generic term covering the concepts, procedures and instructions which enable computer systems to do useful things. The term *Open Source Software* (OSS) is a type of computer software in which source code is released under a license in which the copyright holder grants users the right to use, study, modify, enhance, share and redistribute the software to anyone and for any purpose. Open-source software may be developed in a collaborative public manner. Open source software is generally easier to acquire than proprietary software, often ensuing in better use. The accessibility of an open source implementation of a standard can raise acceptance of that standard. Open source development offers the potential for a more flexible technology and quicker innovation. A number of Open source softwares have been developed for libraries. Some of the Open Source Software which are used in libraries are KOHA, EVERGREEN, NEW GenLib, Open Biblio, PMB, rebase, E-Prints, Fedora, LOCKSS, VALET for EDTs, DSpace, Greenstone, etc.

Various Modules of Open Source Software

Open Source Software are the most popular and widely used library software in the country. It is a mixed blend of functionalities and technology that meet the automation requirements of libraries and information centre's. OSS is not only easy to operate, but can also be easily implemented and modified. Some of the important modules are:-

Acquisition

The acquisition module facilitates ordering of new titles, cancellation of orders, sending reminders, receiving and recording of materials received from different vendors and publishers. It eases the burden for ordering of books, record checking of duplicate purchase orders and follow-up action can also be taken automatically. It speeds up the accessioning and other processing work of the acquisition section by eliminating large amount of repetitive and time-consuming operations, as library staff can search entire database of library holdings for the purpose of duplicate check.

Circulation

The Circulation procedure in a conventional system is very lengthy and consumes much of the staff time in repetitive works. This module supports various circulation functions such as charging and discharging of documents, reservation of documents, sending reminders, collection of overdue, inter-library loan and maintenance of various records very quickly and efficiently by using various technological devices such as computers, barcode scanners, RFID technology etc.OSS helps in the performance of the routine circulation operations easily and quickly. It saves lot of time of staff as well as users.

Cataloguing

Cataloguing module includes the job of describing, recording and displaying details of the holdings of the library. It is used to aid in the production, maintenance and updating catalogue. It is

used in maintaining bibliographic file consisting complete cataloguing elements as required by MARC, CCF etc, Authority control file, OPAC, shelf list, accession file. The other functions which this module covers are cataloguing process, catalogue search, catalogue card generation, user services, authority file maintenance, retro conversion, stock verification process and facility to generate new addition list.

Serial Control

This module help in selection and acquisition, receipt and payment of journals, renewal of journals, checking in periodical collection and claiming missing issues, sending reminders, circulation of current issues, indexing of articles, and verification of the cost and other details of journals through the list of publishers. It also helps in maintaining record of budget sanctioned and amount expended for different categories of serials.

OPAC

Online Public Access Catalogue (OPAC) provides access to library's holdings. Being user friendly, user can search through all bibliographic elements such as author, title, publisher, place of publication, year of publication, ISBN etc. Most of the online catalogues are searchable by author, title, subject and keywords and allows users to print, download or export records to an e-mail account. It also provides the facility to request acquisition of titles to reserve materials and to send over dues /recall/collect notices and messages by e-mail. It also gives an idea to the user about status of the document whether it is available in the library or not.

Web OPAC

It is an optional module .Web OPAC's can be searched by remote users, anywhere in the world, who has to an access to the Internet. Preparing standard catalogue without much effort has become possible due this module.

Administration

User administration facility is used for creating new users and giving them right for accessing different modules.

Overview of Various Open Source Softwares Used in Libraries

Some of the Open Source Softwares used in Libraries is as under:-

Koha

Many smaller libraries cannot afford to purchase, install, and maintain an Integrated Library Systems, (ILS), Koha is a perfect alternative. Koha is built using library ILS standards and uses the OPAC (open public access catalog) interface.

Evergreen

Evergreen, ILS solution is developed to be capable of supporting the workload of large libraries in a system. It uses the OPAC interface, and offers many features including flexible administration, workflow customization, adaptable programming interfaces, and because its open source, cannot be locked away and can benefit from any community contributions.

Greenstone

Greenstone builds collections with effective full-text searching and metadata-based browsing facilities that are attractive and easy to use. The aim of the Greenstone software is to empower users, particularly in university libraries, and other public service institutions, to build their own digital libraries

Fedora

Applications that are built upon Fedora include library collection management, multimedia authoring systems, archival repositories, institutional repositories, and digital libraries for education.

Dspace

Dspace is a digital institutional repository that captures, stores, indexes, preserves, and redistributes the intellectual output of a university's research faculty in digital formats. It manages and distributes digital items, made up of digital files and allows for the creation, indexing, and searching of associated metadata to locate and retrieve the items. It supports the long-term preservation of the digital material stored in the repository. DSpace supports submission, management, and access of digital content.

Open Biblio

OpenBiblio ILS software is accepted all over the world in small and rural libraries as it is easy, has widespread language support, and good quality documentation.

PMB

PMB is an open source ILS Software. It is developed and maintained by the French company PMB Services.PMB is used by various schools, public and institutional libraries.

Table 1: Overview of various Open Source Softwares Used in Libraries

S. No.	Open Source Softwares	Operating System	Type	Language Written in	License	Developers	Cataloguing	Available Languages
1	Koha	Linux, UNIX	Integrated Library System	Perl	GNU GPL	Koha Community	MARC 21, UNIMARC	Multi-lingual
2	Open Biblio	Cross-platform	Integrated Library System	PHP	GNU GPL	Open Biblio Development Team	MARC, MARCXML	--

3.	PMB	Linux, Windows, Mac OS	Integrated Library System	PHP	CeCILL	PMB Services	UNIMARC	French Spanish, Arabic, English, Dutch, Portuguese
4.	Evergreen	Linux, UNIX	Integrated Library System	C, Perl, JAVA	GNU GPL	Georgia Public Library Service, PINES, Evergreen Community	MARC, MARCXML	English
5.	Greenstone	UNIX, Windows	Digital library	JAVA	GNU GPL	University of Waikato UNESCO Human info NGO	Dublin Core metadata scheme is used for electronic documents.	Multi-lingual- English, Arabic, Dutch, French, Chinese, German, Portuguese, Maori, and Spanish.
6.	Eprints	Linux, Solaris, MACOSX	Institutional Repository Software	Perl	GPL	University of Southampton School of Electronics and Computer Science	--	With English translations other languages also
7.	Fedora	Linux	Digital Asset Management	JAVA	APACHE 2.0	Duro Space	RDF	--
8.	New Genlib	Linux Windows	ILMS	JAVA,	GNU GPL	Verus Solutions	MARC 21	--
9.	DSpace	Linux, UNIX	Digital Institutional Repository	JAVA, PostgreSQL	BSD	HP & MIT Labs DuraSpace	Apache SOLR based search for metadata and full text contents	Available in 22 languages

Figure 1: Features & Modules of Open Source Software



Open Source Software, Its Advantages

Application of OSS has profound influence on the usage and reference pattern in library services. It enables libraries to provide most efficient and specialized information services. Open Source Software has helped libraries in improving library operations and accelerating their working efficiency. As it is flexible software, it can be improved and modified according to the needs of the libraries. OSS is exponentially better software development model. The OSS development approach has helped to produce reliable, high quality software quickly and inexpensively. It also helps companies to keep themselves abreast of new technological developments. Companies can also improve their products and market.

Various advantages of OSS are as under:-

1. Access to source code and right to modify enables the unlimited improvement of the product.
2. The right of redistribution, ensures to attract large number of customers to develop, share and modify software.
3. It is cost effective as no licensing and maintenance fee is required. Once the software is obtained it can be installed several times and at various locations
4. As source code is open more and more people can analyze the source code and hence more flaws found are corrected.
5. A particular software package can easily be translated into another language using proprietary software.

Open Source Software, Its Dis-Advantages**Various dis-advantages of OSS are as under**

1. Any person can download, change the source code and redistribute the software without any restriction; with the result one is not able to get any final version of OSS. Each version of OSS has some modifications, which sometimes creates difficulty in migration of data from one version to another.
2. Technical knowledge for installation and maintenance OSS is a prerequisite, without which one cannot use the software.

Suggestions

It is suggested that for better and proper implementation of open source software in libraries, the library professionals should attend various orientation programmes, workshops and short-term courses for updating their knowledge and management skills which can further be used for improving the library and information services significantly.

Conclusion

The library can go a long way in meeting the information needs of its users. Its services have now been advanced with the availability of new techniques and methods. The use of technological aids has facilitated and enhanced the services of the libraries to a great extent. It is concluded that the application of Open Source Software used for libraries has the potential to change the libraries to a larger extent as these are more reliable, flexible, stable, user friendly

and secure and can provide viable alternative to commercial Integrated Library System's. Thus for organizing the library services effectively and efficiently, use of appropriate software is necessary.

Footnotes

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