



Grabbing the feast free: Role of FOSS in development of Libraries and Information centers

“World is Open Source!” Anonymous

Priya Rai
Deputy Librarian
National Law University Delhi
priyarai@nludelhi.ac.in

Abstract

Open Source Software is a worldwide movement which is supported not only by individual government but international organization viz. World Intellectual Property Organization (WIPO) which also underlines its importance in intellectual property regime. The paper is an attempt to trace benefits of open source movement, basic understanding of free and open source software, legal issues associated with it and integration of open software with library management. The paper highlights open source software policy of India as introduced by Ministry of Information Technology in 2015. Also lists a number of open source software useful for various activities viz. automation, digital library management, website management and other routine activities in the Libraries.

Keywords: Open source software, Integrated library management software, Open source software policy

1 Introduction

In this technological transformation age libraries are enjoying the dynamics of collaborations and developments in software industries. The digital India project initiated by the Prime Minister of India with the objectives and vision of integrated of knowledge strength and providing access platform with no barriers. The Prime Minister urged the technology industries to create a platform for wider use and radical impact in the country without any accessing hindrance. The open source community introduced many new sets of software packages for the integration of library systems. Many libraries are migrating from proprietary integrated library software to open source software. The broad spectrum ranges and models provided by software industries



supporting open source software movement has altered the approaching methodologies of libraries and information centers towards open source technologies. The open source movement has introduced new ways of development and distribution of software protected by intellectual property laws with the motive to promote maximum usage. Whereas the WIPO defined both property and open source software as “proprietary software is usually understood to be software in respect of which exclusive rights are maintained, such as those flowing from copyright or patents. These rights allow to refuse access to the source code by third parties for the purpose of copying or modifying the software or at least to control the use of the source code” whereas “an open source software refers to software for which the source code is made freely available for use, reading the code, changing it or developing further versions of the software, including adding amendments to it”.

The article aims to provide significance importance of Open Source Software (OSS) for library automation over proprietary software. Overview of OSS available for integrated library system and discuss the issues emerging from the usage and implementation of the OSS technology.

2 Objective

The article aims to discuss significance of Free Open Source Software (FOSS) for library automation over proprietary software. It provides overview of OSS available for an Integrated library system and discusses the issues emerging from the usage and implementation of OSS technology

3 Open Source Movement and its Benefits

Open source software refers to those whose source code is publically accessible to anyone, have right to access, can make improvements, manipulate, modify versions and re-distribute the product with authorizations to other users. Whereas in proprietary software the source code can only be viewed, modified by only those who posses legal authority to maintain it or have control over it. Since last few years the OSS has emerged as an alternative mode from proprietary software. Clark (2008) states that the merit of adoption of open source software by the libraries is cost effectiveness. Gonzalez-Barahona (2000) finds that the beneficial scope associated with OSS are ranges from philosophical and ethical reasons to pure practical issues. According to Free Software Foundation (FSF) OSS facilitates number of community benefits to its users some of them are



freedom to run the program, freedom to study the programme, access of source code, freedom to redistribute, make improvements and many more. Heron, Michael (2013) elaborates the various benefits of application of open source model. It further highlights various enthralling reasons to distribute software as open source like increase market share, long-term sustainability, enhancement of personal reputation and other potential benefits like future employments. In today's digital world, libraries are already overburdened due to lack of skilled staff and facing budget cuts and large portion of the amount allocated for access to digital databases. It is becoming critical to invest of costly commercial software platform where the high fee and large percentage of annual maintenance is matter of discussion.

As an alternative initiative for ILM open source software has built impressive impact with its numerous advantages. Some of the featured advantages are:

3.1 Reliability: the reliability of a software is evaluated when a software meet certain standardizations and specifications and the problems like correct operation, no sudden failure or data loss and properly considering the features of antivirus. Many Open source software has claimed to be high quality and well designed software and the availability of source code make it more reliable.

3.2 Stability: Open source software discourages monopoly trade and provides freedom to access, distribution and redesign by any user. They do not require paying any expensive license fees as in case of proprietary software. All the updates with new versions are also available with all control and source code with can be modified according to the need of the organizations. The availability of open control panels and anti-monopoly nature of the software makes it more stable.

3.3 Accountability: Open source software is based on high end technologies with integrated management system which integrate combined server applications, services and workstation management for efficient administration. Moreover the availability of open source code helps to identify and correction of the basic security issues. These features make it more accountable.

3.4 Low Costing: Since most of the open source software are operatable on Linux operating system which is easily portable and compressed and requires less hardware power to perform its



functions. It does not require any costly hardware to operate. Moreover is available free to download and require minimum implementation cost.

3.5 Support: Open source software provides free license to use and redesign. Although it does not provide any direct support contract with the users but there are many mediators or software solutions or companies that provides free or low cost maintenance, support and high quality services.

4 Basic Understanding of Free and Open Source Software (FOSS)

Free software movement was initiated by free software foundation whereas the open source initiative (OSI) was introduced in 1998 with an opposite approach. A group came together with the objective for making open source agreeable to the business community. Though, the main target of both the community is to deplore the approach and strategy of proprietary software. According to Stallman, Richard Both free software and open softwares belong to the same class to differ in basic fundamental values. “*Open source is a development methodology whereas free software is considered as social movement*” free software focuses on users’ freedom on the contrast open access concentrate on betterment issues.

According to one of the leading free software site GNU “Free software is a matter of liberty, not price” and the free software permit four types of essential freedom to users of the programme.

Freedom 0 is “The user should to be able to run the program, for any purpose.”

Freedom 1 is “The access to the source code, the user should be permitted to study how the program works, and adapt it to one’s needs.”

Freedom 2 is “The freedom to redistribute copies.”

Freedom 3 is “The freedom to improve the program, and right to release the improvements to the public, so that the whole community benefits from it.”

Whereas according to ‘*Open Source Initiative*’ the basic criteria and distribution terms of a license for open source is as under.



4.1 Free Distribution: The license shall put no restriction on any party from selling or does not require a royalty or other fee for such sale.

4.2 Source Code: The distribution of program must be provided with source code without any confusion and should be allowed for any modification without any charge

4.3 Derived Work: The license must allow modification and distribution and derived work, under the same terms as the license of the original software.

4.4 Integrity of the Author's Source Code: According to open source license, the license may restrict source-code from being distributed in modified form *only* if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.

4.5 No Discrimination Against Persons or Groups: The license must not discriminate against any person or group of persons.

4.6 Distribution of License: The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

4.7 License Must Not Be Specific to a Product: The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

4.8 License Must Not Restrict Other Software: The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.



4.9 License Must Be Technology-Neutral: No provision of the license may be predicated on any individual technology or style of interface.

5 Legal Issues Surrounding Open Source Software

Innovations in the software programming indubitable considered as the proprietary stakeholders outfit, however FOSS has laid the foundation for establishing promulgation of open source philosophy and created new paradigm shift in the field of software industries. The debate is high rise on the new doctrine philosophy, the diversified licensing formats and software protection. Bernard (1995) finds that fundamentally following four vehicles of intellectually property are driven for software protection. First is trade secret law for the protection of secrets embodied in or execute through software. Second is copyright as legislative protection, third is patent protection for technological protection and fourth is trademark protection. Whereas on the contrary Brown (2010) focused on copy left licenses or movement which are designed to license the rights to the public at large.

6 Free and Open Source Policy (FOSS) in India

The Free and open source software (FOSS) due to easily availability and high productivity and highlighted feature no proprietary control, has created a situation which has lead to high boom in the usage and downloading. This sticky situation has advocated and propounds many reasons for formation of FOSS policies.

In India, Open Source Software Policy was designed and introduced by Ministry of Information Technology, Government of India in 2015. National Police on Information Technology 2012, India recommends to adopt open standards and promote open source and open technologies under one of its objectives. According to Ranjan, Rakesh (2017) emphasizes three policies of Minsitry of Information Technology supporting open source software and resources.

In first document, Policy on Adoption of Open Source Software for Government of India, “the policy statement clearly says, Government of India shall Endeavour to adopt Open Source Software in all e-Governance systems implemented by various Government organizations, as a preferred option in comparison to Closed Source Software, and that The source code shall be



available for the community/adopter/end-user to study and modify the software and to redistribute copies of either the original or modified software. It also says, "Source code shall be free from any royalty. Open source enthusiasts all over the world will be glad to know that the nature of compliance of the policy is mandatory. Open source as a preferred option is chosen on the basis of the merit of open source and its approach."

Another document Policy on Collaborative Application Development by Opening the Source Code of Government Applications, "The policy, Collaborative Application Development by Opening the Source Code of Government Applications, intends to increase the pace of e-governance application development and rapid roll-out/implementation by adopting an open-source development model based on current worldwide practices like GitHub and SourceForge."

The third document on Policy on Open Application Programming Interfaces (APIs) for Government of India states "the aims to make all government services digitally accessible to citizens through multiple channels, such as web, mobile, and common service delivery outlets. To meet this objective, there is a need for an interoperable ecosystem of data, applications and processes which will make the right information available to the right user at the right time."

7 Integration of Open Source software and Libraries Management

The application of information and communication technologies for operation of various library functional areas like acquisition, cataloguing, circulation, serials management and converting into an integrated library automation system with well equipped features and functions of library for the benefits of readers is essentially required. Switching to the library automation system are the most reliable and sustainable way to shift towards technology based services to enhance library access and dissemination efficiently and effectively. Numbers of countless significant benefits are noted by the library professionals while implementing OSS for integrated library system. Muller (2011) stated that "integrated library systems (ILS) are multifunction, adaptable software applications that allow libraries to manage, catalog and circulate their materials to patrons". Ukachi (2012) spotlight the development of open source software and its advantages for the library services and also highlight the freedom it confers to users in terms of providing the access



of source code, its cost-effective feature which tempting libraries to adopt it for various services to the users, digitization and other library management functions.

8 Open Source Software for Libraries

Libraries also have an edge supporting its activities digitally through open source software. Various activities like automated housekeeping functions, digital library management, website hosting of resources and other routine activities have an alternative solution through open source software. The below mentioned table shows a categorical representation of various open source software with their accessibility links which support libraries for better and efficient function in digital environment.

Table 1

Open Source Softwares with accessibility links at a glance

Library Automation	Koha: Integrated Library System	http://www.koha.org/
	NewGenLib	http://www.verussolutions.biz/web/
	ABCD	http://www.abcdlibrary.com.br/abcd/
	Evergreen	https://evergreen-ils.org/
Digital Library	Greenstone Digital Library Software	http://www.greenstone.org/
	DSpace	http://www.dspace.org/
	EPrints	http://www.eprints.org/uk/
	Fedora	https://getfedora.org/
Web Publishing	Drupal	https://www.drupal.org/
	Wordpress	https://wordpress.com/
Other Computer Programs useful for Library Routine Activities	Ubuntu	https://www.ubuntu.com/
	Open Office	https://www.openoffice.org/download/
	Thunderbird	https://www.mozilla.org/en-US/thunderbird/
	GIMPshop	https://www.gimpshop.com/
	NVU	http://www.nvu.com/
	PDF Creator	http://www.pdfcreator.org/pdfcreator

The table mentions that Koha, NewGenLib, ABCD and Evergreen are some examples of open source software useful for automated housekeeping functions of the library. Greenstone, DSpace, EPrints and Fedora are another example of maintenance of digital library contents. Drupal and



Wordpress are the tools useful for web content management of digital resources of library. Apart from specialized automated functions, a number of other open source software are also available for supporting routine functions of the library viz. Ubuntu, Open Office, Thunderbird, GIMPshop, NVU and PDF Creator.

9 Conclusion

Since last ten years, the Open Source Community has beguiled their efforts for facilitating open source code based software, some of which are more reliable than any counterpart commercial software. Open source software is playing a greater role in supporting activities in many industries. Libraries are among those industries taking advantages of getting free open source software for dealing their routine as well as task specific functions. The cost of commercial software is also resulting of moving libraries towards open source software. The librarians in current scenario have to be well equipped with knowledge and technically sound with information technology for adopting and implementing open source software for better service to their clientele.

References

Bernard AG (1995): Software and Intellectual Property Protection: Copyright and Patent Issues for Computer and Legal Professionals . Quorum Books, Westport, 1995.

Brown, C S. Copyleft, the Disguised Copyright: Why Legislative Reform is Superior to Copyleft Licenses (October 6, 2010). University of Missouri Kansas City Law Review, Vol. 78, p. 749, 2010. Available at SSRN: <https://ssrn.com/abstract=1688402>

Clark, J.R. (2008). The Internet connection: open source library software-ready for prime time? *Behavioral & Social Sciences Librarian*, 27 (3/4), pp.211-213.

Davidson, Stephen J. (2004). Primer on open source software for business people and Lawyers. Retrieved from http://www.wipo.int/export/sites/www/sme/en/documents/pdf/opensource_software_primer.pdf

GNU (nd). What is free software? Retrieved from <https://www.gnu.org/philosophy/free-sw.en.html>



Gonzalez-Barahona, J. M. (2000). Advantages of Open Source Software. Available: <http://eu.conecta.it/paper/advantages.html>. (January 23, 2011)

Heron, Michael, Hanson, Vicki L and Ricketts, Ian (2013). Open source and accessibility: *Advantages and limitations*. *Journal of Interaction Science*, Vol.1 (2). Retrieved from <https://doi.org/10.1186/2194-0827-1-2>

<https://www.iiste.org/Journals/index.php/IKM/article/viewFile/10939/11242>

<http://meity.gov.in/content/policy-open-application-programming-interfaces-government-india>

<https://www.gnu.org/licenses/copyleft.en.html>

<https://in.linkedin.com/in/rakeshranjan2201>

Muller, Tristan (2011). How to choose a free and open source integrated library system, OCLC systems & services. *International digital library perspectives*, Vol. 27(1):57-78. Retrieved from <https://doi.org/10.1108/10650751111106573>

Oldham, Paul. (2016). WIPO manual on open source patent analytics. Retrieved from <https://wipo-analytics.github.io/introduction.html#an-overview-of-open-source-and-free-software-tools>

Open Source Initiative (nd). Open source definitions (Annotated). Retrieved from <https://opensource.org/osd.html>

Richard, Stallman (n.d.). Why open sources misses the points of free software. Retrieved from <http://www.gnu.org/philosophy/open-source-misses-the-point.html>

Ukachi, Ngozi B., Nwachukwu, Victor N. and Onuoha, Uloma D. (2014) Library automation and use of open source software to maximize library effectiveness. *Information and Knowledge Management*. Vol.3 (4). Retrieved from



Dr. Priya Rai

Deputy Librarian & Officer Incharge

B.Sc. MLISc., M.Phil (L&ISc.), Ph.D., LL.B. PGDLAN, UGC-NET.
Commonwealth Fellow IALS, University of London, UK.
Bitner Research Fellow, Cornell University, USA.

Dr. Priya Rai is the Deputy Librarian and officer in-charge of Justice T.P.S. Chawla Library, NLUD. Prior to joining NLUD she worked with prime University libraries viz, GGSIP University and Indian Law Institute. She has an experience of 17 years of active library services.

Dr. Rai has earned her M Phil & Ph.D. in Library and Information sciences for Banasthali University, Rajasthan and LL.B form Meerut University and qualified UGC-NET. She is the recipient of FCIL Schaffer Grant form American Association of Law Libraries-2012 and Bitner Research Fellowship form Cornell University Law Library (USA). She also delivered a talk on 105th annual meeting and conference (AALL) Boston. She has credited herself for organizing the 1st international conference on access to legal information and research in digital age, representing law librarianship in India. She has co-edited 07 books and published various papers in referred journals and conferences. She has extensive interest and specialization in library automation, electronic retrieval and dissemination through open access and databases, e resource training and associated with LII of India project. She is member of American Association of Law Libraries, International Association of Law Libraries, Delhi Library Association, Special Library Association and All India Media Library Association.