"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 04, Issue: 06, Nov. – Dec. 2017 eISSN NO. 2394-5362
Impact Factor (SJIF) - 4.935

OPEN SOURCE SOFTWARE (OSS) INITIATIVE AND MAJOR DEVELOPMENTS

Dr. Shaikh Muhammad Zuber A. M.
Librarian
AKI's Poona College of Arts, Science and Commerce
Pune, Maharashtra, India

Abstract

The Open Source Software (OSS) ends the monopoly of commercial and proprietary software. It is important to know the initiatives, licenses, benefits and major developments taken place for the development of OSS. This article deals with the topics such as historical background of the OSS initiatives and a road map for further development stages. Any software releases with a particular licensing term hence the OSS community also develops the licensing terms and conditions of its OSS. The short information about the difference between free and open source software covers the peculiar aspects for thorough understanding.

Open Source Initiative (OSI)

The Open Source Initiative (OSI) is a non-profit organization dedicated to promoting Open Source Software which came into existence in the year 1998, founded by Eric S. Raymond and Bruce Perens. The free software movement of Stallman did not catch the mainstream. Eric Raymond and Bruce Perens thought that an important portion of the problem existed in Stallman's term "Free" software. Their intention was to encourage OSS in commercial arena and they thought that both Free/Open Source Community and the commercial industry will benefit from broader OSS distribution; therefore, along with other hackers, they started the "Open Source Movement". The licensing terms were on the same lines as governed by the free software foundation. The difference was OSI preferred practical benefits rather than philosophical benefits that endorsed granting users moral freedom offered by free software foundation. The 'Open Source' label was coined at a strategy session held on 3rd February 1998 in Palo Alto, California after releasing the announcement of the Netscape source code. "In 1998, a group of individuals advocated that the term free software should be replaced by 'Open Source Software' (OSS) as an expression which is less ambiguous and more comfortable for the corporate world." (Raymond E. , 2007). The OSI developed the Open

Source Definition (OSD). "The Open Source Definition was originally derived from the Debian Free Software Guidelines (DFSG) available at (http://www.debian.org/social_contract.html#guidelines). Bruce Perens had composed the original draft of the DFSG and was edited, refined and approved as formal policy by the Debian developer community in 1997. The Open Source Definition then created during the launch of the OSI in February 1998 by revising the DFSG and removing Debian-specific references." (Open Source Initiative, History of the OSI, 2012). "The definition is not a license itself, but a guideline and trademark for OSS software licenses other than GPL. Licenses according to the OSD guaranteed several freedom to software users, including commercial users. In order to raise acceptance of OSS in the business world, the term Open Source Software instead of Free Software was established and widely accepted. The 1990s experienced a significant rise in attention paid to Open Source projects. Many companies from the IT industry began supporting the project. IBM, for example, supports a variety of Open Source projects. In 1998, Netscape was the first prominent company to release a proprietary software product as OSS." (Weerawarana & Weeratunga, 2004)

The Open Source Initiative **(Open Source Initiative, Licenses and Standards)** maintains the list of popularly approved licenses which are widely used and having strong communities they are as follows:

- Apache License 2.0
- BSD 3-Clause "New" or "Revised" license
- BSD 2-Clause "Simplified" or "FreeBSD" license
- GNU General Public License (GPL)
- GNU Library or "Lesser" General Public License (LGPL)
- MIT license
- Mozilla Public License 2.0
- Common Development and Distribution License
- Eclipse Public License

Other Major Projects and Developments

Open source can be traced back in the early days of computer invention, when software was generally supplied with hardware. Later improvements in networking technology enforced the open source movement to work, share and develop software in collaboration. The establishment of free software foundation and GNU; released on Linux kernel, emergence of the Internet and World Wide Web marked tremendous impact on the development of OSS. The free software development

process was proven successful in the case of development of Apache HTTP server and the establishment of Mozilla and Eclipse foundation. They have been discussed below in detail.

FREE SOFTWARE VERSUS OPEN SOURCE SOFTWARE

Free Software (FS) is also known as Open Source Software (OSS) or Free/ Open Source Software (FOSS) or Free/Libre Open Source Software (FLOSS). Developers have used these alternative terms, consequently to describe Open Source Software (OSS) which is also 'Free Software.' The "Free Software Foundation" defines the distribution terms and says 'Free Software' means software that respects users' freedom and community. It means that the users have freedom to run, copy, distribute, study, change and improve the software. Thus, "Free Software" is a matter of liberty, not price. The Open Source Initiative on (www.opensource.org) has given the distribution terms of OSS that must comply that it should allow modification, redistribution, open source code, no discrimination against any person or group or fields or endeavor, distribution of license who receives the program; license must not be product specific; restrict other software and must be technologically neutral. The 'Free Software' and 'Open Source Software' are not only two different terms and ideologies but also the founders who propounded these two terms advocate two different explanations and stands firm on their philosophies, although the members of both communities collaborate intensively on practical projects. These two terms carry a different legacy, variance and hold a separate identity altogether. The term 'Free Software' came into existence in the year 1984 is the older one of the two terms and the term "Open Source Software" was invented in 1998.

GNU operating system sponsored by Free Software Foundation on its portal addressed this issue under the heading separate movements ¯ Why "Free Software" is better than "Open Source" and says that "The Free Software Movement and the Open Source Movement are today with different views and goals, although we can and do work together on some practical projects. The fundamental difference between the two movements is in their values, their ways of looking at the world. For the Open Source movement, the issue of whether the software should be open source is a practical question and not an ethical one. As someone put it, "Open source is a development methodology; free software is a social movement."

Hence, 'Free Software' is "software that gives the user certain freedom and feels that proprietary software is unethical and unjust" on the contrary 'Open Source' contains a wider diversity of software than it is allowed by free software, it encompasses free software as well as semi-free software and even certain proprietary programs. The open source community has no issues to

coexist with the creators of proprietary software and feel that whether software is open source or free is a matter of practicality and not ethics.

FREE / OPEN SOURCE SOFTWARE LICENSES

The important tenacity of open source licensing is to reject anybody the right to exclusively exploit a work. The term license is used to define the legal way copyright and patent holder award permission to others to use his intellectual property. An open source license is a way to use its intellectual property in such a way that software freedom is protected for all. It allows the source code to modify, share under defined terms and conditions. This allows end users to customize according to their needs and necessities. Open source licenses are mostly free of charge though there are some exceptions.

Open Source Initiative formulated the definition of OSS and open source licenses must comply with the open source definition. Before the acquisition of a license, it must go through the Open Sources Initiative's (OSI) license review process and should meet the demands of the definition approved by OSI. Only then such certified license can be called as "OSI Certified Open Source Software" and is entitled to use the OSI certification mark. The lists of approved popular licenses are mentioned on the portal of OSI it also maintains licenses according to alphabetical order and category wise (https://opensource.org/licenses).

Free Software Foundation on his another portal GNU Operating System sponsored by Free Software Foundation (http://www.gnu.org/licenses/license-list.html) gives details of various licenses and comments about them. The portal gives information about licensing criteria how to choose a license for your own work and license violation page. It also maintains a separate directory called Free Software Directory (http://directory.fsf.org/wiki/Main_Page) is a catalog of 6000 free software packages and their licensing information. It helps to know what license a particular software package is using.

Following are the details of different licenses:

Benefits of Open Source Software

1. **OSS Philosophy:** All the benefits of OSS in LIS irrigates from its philosophy. The concept started from free software movement which guarantees its users the freedom to use, run, copy, modify and distribute the software without any kind of discrimination against any person, field or endeavor.

2. **Cost Benefits:** Major problem is the procurement of software and its maintenance. Open Source Software is an alternative to proprietary software and virtually is maintenance free;

free customization since the source code is open; no annual maintenance contract; regular up-gradation; copyleft license; international standards; incorporation of new features and multiple numbers of copies. For the above mention features, OSS stands out to be the best and libraries don't have to pay anything. Hence, it is the most cost effective as compared to proprietary software.

3. **Strong Community:** To grow effectively OSS requires a lot of community support. OSS programmers and developers work voluntarily to hand over unmatched products which are far superior to proprietary software. Open source is not reliant on the firm or author that originally produced the software, even if the firm failed the code exist to redevelop further. Millions of programmers from different parts of the world help to develop the software which is a very strong point as compared to proprietary software where there is always a fear that the company might shut or discontinue the product and its support. The community is working relentlessly to provide social and economic benefits to the general public without any boundaries and barriers. The job is not done after the release of software but just a foundation laid. Post software support ensures the guarantee and sustainability of the software. The OSS community not only delivers the software but also provides post software support in the form of written documents, manuals, online links, forums; videos are available to fix bugs and errors. It is now up to library professionals to carry the wheel by organizing seminars, conferences, workshops and hands-on-practice sessions.

4. **Useful OSS:** OSS is not only developing software for libraries but also actively making software for a varied range of fields and areas. Libraries use end number of software in disseminating ICT-based services to its users. There may be a certain software which is exclusively used by the library but at the same time, there are many other OSS that can be used in library as there is a growing demand due to the explosion of information on the Internet. Hundreds of software can be used in libraries for better service. The areas include library automation; digital library; content management, course management, journal publishing and archiving, citation management; e-learning management' office suite, media player; desktop publishing etc. Potential software that could be used in libraries is explained in detail in chapter five of this thesis. If one calculates the total cost of ownership (TOC) of software, OSS proves to be less expensive than proprietary software.

5. **Security:** OSS is very stable and platform friendly. Developers of OSS after careful testing of software, release the stable version which is bugs and error free. Bugs and errors reported are dealt carefully and necessary plug-ins and patch files are released to see the software

works up to mark and reputation. OSS is less vulnerable to virus and technology. Neutral means it can run on Windows, Linux, Unix and Mac operating systems. Perl and PHP language of OSS enables it to work on many platforms. Linux is the most secure and stable operating system and less vulnerable to viruses. OSS does not depend on any definite hardware or operating system or platform to operate.

6. **Other minor benefits:** OSS features includes: cost effective; better quality; freedom from vendor independence; flexibility, extension;, adds-on, elasticity; flexible support option; customizability; ability to scale at little cost or penalty; collaborative development; interoperability; better performance; more reliable; superior security; local control; pace of innovation; multiple language support; access to source code; right to- redistribution; modification and use of software anyway; unlimited report generation; migration of data; compatibility with open standards and international standards.

References

1. Breeding, M. (2002, October). An Update on Open Source ILS. *Information Today, 19*(9), 42.
2. Eclipse Foundation. (2016). *About the Eclipse Foundation*. Retrieved May 10, 2016, from Eclipse: https://eclipse.org/org/
3. Free Software Foundation Inc. (2016, April 11). *Various Licenses and Comments about Them*. Retrieved May 10, 2016, from GNU Operating System: http://www.gnu.org/licenses/license-list.html
4. Kavanaugh, P. (2004). *Open Source Software Implementation and Management.* United States of America: Elsevier .
5. Krogh, G., & Hippel, E. (2003). Special issue on open source software development. *Research Policy, 32*, 1149-1157. .
6. . Open Source Initiative. (n.d.). *Licenses and Standards*. Retrieved May 4, 2016, from Open Source Initiative: https://opensource.org/licenses
7. Open Source Initiative. (2012, September). *History of the OSI*. Retrieved May 20, 2016, from Open Source: https://opensource.org/history
8. Wikipedia. (2016, May 18). *History of the Internet*. Retrieved May 20, 2016, from Wikipedia: https://en.wikipedia.org/wiki/History_of_the_Internet