OSS in A3 Library of the Web Based Digital Era

Ch Ibohal Singh   Th Madhuri Devi   P Sanajaoba Singh

Abstract

There has been a paradigm shift in the concept of library today. In this web era the concept of Anytime Anywhere Accessible Library (A3 Library) has also been emerged with the application of Open Source Software (OSS). The present paper aims to highlight the changes in the web, OSS and its applications in A3 library emphasizing on its Ten Commandments, licenses and roles in the library.

Keywords: Web, Digital Era ,A3 library, OSS, ICT, GIS, Digital Library.

Introduction

The web in this digital age is changing so fast with the advent of new technology. The web technology has enabled to access virtually libraries around the world today. During the phase of WEB-1 in nineteen nineties we were able to send mail over the Internet. During 2002, in WEB-2 period, people could establish their blogs over the net to keep their records on the web. Since the beginning of the year 2007 we have been witnessing the emergence of WEB-3 to which one enables marking of the desired items with the successful application of the Geographical Information System (GIS).People are also trying to create a database on the internet. In the next generation of web, i.e.WEB-4, as expected, people will enable to have a database having virtual movement over the Internet where people will feel like moving to any place where he/she wants to go in a virtual environment. Emergence of the

- virtual reality
- virtual time reality
- real time virtual environment, etc.

are expected from this upcoming web. In this web era we have been hearing about Anytime Anywhere Accessible Library (A3 Library), which has been possible with the application of Open Source Software (OSS) in the library activities in the new environment.

1.   The Paradigm Shift

The application of digital technology in libraries has brought in a revolutionary paradigm shift in all types of libraries. This shift can be seen from the following table [1]:

From	To
Custodian of books	Service-oriented information providers
One medium	Multiple media
Own collection	Library without walls
In good time	Just in time

In-sourcing	Out-sourcing
Local reach	Global reach
User goes to library	Library comes to user

In this new environment the Library and Information Professionals (LIS) need to deal with information available not only in the traditional printed resources, but also resources in digital media.

2.   Digital Library

A digital library has been considered as a system that provides the users with coherent access to large, organised repository of digital information and knowledge. This organization of information and knowledge is characterized by the absence of prior detailed knowledge of the users. On the other hand digital libraries are organizations that provide the digital resources, including specialized LIS professionals to select, structure, offer intellectual access to interpret, distribute, preserve the integrity of, and ensure the persistence over time of digital works so that readily and economically available for users. The ability of the users to access, recognize, and utilize digital resources is enriched by the capabilities of digital technologies. In fact, digital libraries are libraries extended and enhanced through digital technology.The purposes of digital libraries include:

♦   to speed up the systematic development of the means to collect, store, and organise information and knowledge in digital form, and of digital library collections.

♦   to promote the economical and efficient delivery of information to all parts of society.

♦   to encourage cooperative efforts which leverage the considerable investment in research resources, computing and communications network.

♦   to strengthen communication and collaboration between and among the research, business, government and educational communities,

♦   to contribute to the lifelong learning opportunities of all people[2].

3.   A3 Library

A3 Library means Anytime Anywhere Accessible Library. It is the library of the new digital era, which is ICT dependent. The concept of A3 Library has become a reality today with the application of the new ICT gadgets, particularly with the emergence of Open Source Software (OSS).It may be a taken as a new concept of the Digital, Electronic, Virtual Library, etc. OSS plays an important role in making an A3 Library lively and accessible worldwide.

4.   Open Source Software (OSS)

Open Source Software (OSS) as a free software began to appear in early part of 1998. It generally refers to the software distributed in source form, which can be modified freely and redistributed. Its

basic character is that the source code of the software is open to the world to take, modify and reuse. Application of OSS permits its users freedom concerning access:

♦ to run the programme for different purposes;
♦ to study how the programme works and adapt it to users needs;
♦ to redistribute multiple copies;
♦ to improve the programmes.

4.1. Rights and Obligations

Open Source Initiative (OSI) has defined OSS as software providing certain specific rights and obligations as enumerated below:

♦ No royalty or other fee imposed upon redistribution.

♦ Availability of the source code.

♦ Right to create modifications and derivative works.

♦ May require modified versions to be distributed as the original version plus patches.

♦ No discrimination against persons or groups.

♦ All rights granted must flow through to/with –redistributed versions.

♦ The license applies to the programme as a whole and each of its components.

♦ The license must not restrict other software, thus permitting the distribution of open source and closed source software together[3]

5. OSS: Ten Commandments

As identified by OSI, there are ten criteria for a software product to be called open source. OSI also certifies a software license as an OSI Certified License on the basis of ten Commandments as detailed below[4]:

♦ **Free Redistribution :** The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programmes from several different sources. The license shall not require a royalty or other fee for such sale.

♦ **Source Code :** The programme must include source code , and must allow distribution in source code as well as compiled form.

♦ **Derived Works :** The programme must allow modifications and derived works and must allow them to be distributed under the same terms as the license of the original software.

♦ **Integrity of the Author's Source Code :** 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 programme at build time.

♦ **No Discrimination against Persons or Groups :** In order to get the maximum benefit from the process, the maximum diversity of persons and groups should be equally eligible to contribute to open source.

♦ **No Discrimination against Fields of Endeavour :** The license must not restrict anyone from making use of the programme in a specific field of endeavour.

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

♦ **License must not be specific to a Product :** The rights attached to the programme must not depend on the programmes being part of a particular software distribution**.**

♦ **License must not restrict other Software :** The license must not place restrictions on other software that is distributed along with the licensed software.

♦ **The License must be Technology-Neutral :** No provision of the license may be predicted on any individual technology or style of interface.

6. OSS in Library

The important role of OSS in library includes the following:

♦ Using OSS automation of the library activities can be done efficiently.
♦ OSS facilitates management of multimedia collections of the library.
♦ Linux Operating System ,as a platform , can be used for networking of libraries using OSS, which can reduce the cost.
♦ OSS can successfully be used in different office work of the library. Open office an OSS , for instance, can be used to handle office work.
♦ The programming/script languages available with OSS can be employed for designing websites of the library.
♦ OSS is successfully used in designing Digital Libraries.
♦ It also enables the library to make accessible its services anytime and anywhere .

6. 1. Using OSS in A3 Library

The major contributing factors towards using the OSS in libraries of the modern age may be mentioned about:

♦ Availability with free, thus saving budget of the library.
♦ Non locking into a single vendor, thereby allowing to choose for buying technical support from other company/vendor.
♦ Flexibility to use and access.

♦ Possibility to share responsibilities of solving information systems issues concerning their accessibility.

♦ There is no need to pay any licensing cost.

♦ Reliability is a major quality of the OSS.

♦ Freedom to copy and redistribute the software enabling the library makes copies for all the computer systems.

♦ Upgradation fee is negligible, even sometimes nil.

The Draft Report of Digital Library Federation, USA (2001) considered the major reasons for using OSS in the libraries with the following its three virtues:

♦ OSS is an economical alternative to libraries reliance upon commercially supplied software.

♦ OSS is essential if libraries are to develop software and systems that meet their patrons' needs.

♦ It ensures that library systems and online services will be more functional for libraries and their patrons and as such be good for library patrons.

7.   Licenses for OSS

The most common and popular licenses for OSS include:

a) GNU Public License (GPL)

b) Limited GNU Public License (LGPL)

c) BSD Style License

d) Artistic License

e) Netscape Public License and Mozilla Public License

f) Apple Public Source License (APSL)

7.1   GNU Public License (GPL)

The GPL originated from the GNU project of Richard Stallman is one of the original and most common software licenses. It states that

♦ Software released under it must be given away freely with its source code.

♦ Any code derived from the original source is also under the GPL and must be given away freely.

7.2   Limited GNU Public License (LGPL)

This is similar to the GPL but includes one extra provision. It allows software, mainly function libraries to be released so that non-open software may use it.

7.3 BSD Style License

It has been originated from Berkeley Systems Distribution. Here certain restrictions are found on what way we can do with it. In this license, some code modification can be kept private and do not have to be redistributed.

7.4 Artistic License

It has been developed for Larry Wall's PERL programming language system. It is declining in popularity.

7.5 Netscape Public License and Mozilla Public License

Originally developed for Netscape's Open Source, these licenses released their Navigator web browser. They allow changes to be taken private and NPL give special privileges to Netscape itself.

7.6 Apple Public Source License (APSL)

This license has three fundamental flaws:

♦ Changes
♦ Even for private use
♦ Must be returned to Apple

Groups releasing modified versions must contact Apple about it and license can be resolved by Apple at any time.

8. Conclusion

Use of OSS by the libraries of the new digital era has been in increase since the recent past. Its adoption by the libraries enable to

♦ lower the initial cost of its implementation;

♦ enjoy the users great freedom to control their own computers;

♦ encourage everyone to learn and rejects individual's thrust for knowledge;

♦ automate the library system;

♦ network among the libraries;

♦ design websites;

♦ develop digital library;

♦ increase reliability; and

♦ make the library accessible at any time and anywhere.

It is expected that in just near future, most of the libraries ,irrespective of their type, will be using OSS for use of their users having a very complex nature of information needs and for the benefit of all.

References

1. SABARATHNAM (D S). Transforming libraries to support change and growth. In DEMPSEY et.al. Networking and the future of libraries. 1995. The Library Association, London.   (L)

2. Gopal, K. Intellectual Freedom in Digital Libraries.Authorpress.Delhi.2005.p.3-4.

3. Webbink, M.Understanding Open Source Software.http://www.groklaw.net/article.php?story=20031231092027900(Accessed on 14/09/08).

4. Parens,B.TheOpenSource Definition.http://www.parens.com/cArticles/OSD.html(Accessed on15/09/08).

About Authors

Dr. Ch. Ibohal Singh, Lecturer, Department of Library and Information Science, Manipur University, Imphal.

Dr. Th. Madhuri Devi, Reader and Head of the Department of Library and Information Science, Manipur University , Imphal.

Dr. P Sanajaoba Singh, Selection Grade Librarian, D.M.College of Science, Imphal.