Enactment of Open Source Software's and Library

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ABSTRACT

Software is one of the predictable devices for all processes in today's worldwide scenario. Every application which was developed was modified or holding registered ownership. However, there prevail several issues related with exclusive software, such as licensing, contract levels, cost, resource necessity, attacks, photograph of source code etc. Thus, software which was originally claimed exclusive and operated by organizations has now turned their scope towards becoming open and free software. This is due to moving ahead with technology and to reap the results of best follows available with latest trends in technology. Open source software is, software that users have the ability to run, copy, distribute, study, change, share and improve for any purpose. Open source library software's does not need the initial cost of commercial software and enables libraries to have greater control over their working environment. Library professionals should be aware of the advantages of open source software and should involve in their development. They should have basic knowledge about the selection, installation and maintenance.

1. Introduction

Open source software is computer software whose source code is available under a license (or arrangement such as the public domain) that permits users to study, change, and improve the software, and to redistribute it in modified or unmodified firm. It is often developed in a public, collaborative manner. It is the most prominent example of open source development and often compared to user generated content.

Evolution of mankind has led to several inventions and discoveries. Technology is one such frontier which has evolved by the intelligent creation of mankind. Software which is one of the reflections of existence of technology has become one of the vital ingredients of day to day activities of the society.

Generation of computers which is witnessed since 1945 provided platform for various types of software and hardware to get introduced into the arena of technology. Initially, the perception was towards significance of hardware in lieu with software. However, the pace in which hardware grew in comparison with software was not hand in hand. Further, cost of software was considerably low though software took its evolution in a faster mode than that of hardware. However, realization of software importance towards the benefit of human society enabled advancement of technology with emphasis on types of software either generic or bespoke.

For many libraries, organizing their books and other media can be daunting task, especially as the library grows with more material. Years age we had crude card catalogue systems (remember the Dewey Decimal System) that kept things organized, but were difficult to maintain. With today's computing technology, organizing our libraries has never been easier or more efficient. Gone is the card catalogue and in some libraries, it's much easier to locate a book through and internet connection and picking it up upon your arrival, rather then wasting the time scouring the aisles looking for your next read. Now just because the world has been blessed with wonderful software solutions that make everything easier to do, doesn't mean that every library in the universe is using these solutions. Many Libraries do not have huge amounts of money to burn, and any that they do get usually goes to purchasing additional resources.

Industrial market which was open to share their developments also kept them open to accept changes suggested by general public. This concept of incorporating changes into their products gave path towards introduction of open software system [1].

2. Open Source Movement

In 1998, a group of individuals advocated that the term free software be replaced by open source software (OSS) as an expression which is less ambiguous and more comfortable for the corporate world. Software developers may want to publish their software with an open source software license, so that anybody may also develop the same software or understand how it works. Open source software generally allows anybody to make a new version of the software, port it to new operating systems and processor architectures, share it with others or market it. The aim of open source is to let the product be more understandable, modifiable, duplicatable, reliable or simply accessible, while it is still marketable.

The Open Source Definition, notably, presents an open-source philosophy, and further defines a boundary on the usage, modification and redistribution of open-source software. Software licenses grant rights to users which would otherwise be prohibited by copyright. These include rights on usage, modification and redistribution. Several open-source software licenses have qualified within the boundary of the Open Source Definition. The most prominent example is the popular GNU General Public License (GPL). While open source presents a way to broadly make the sources of a product publicly accessible, the open-source licenses allow the authors to fine tune such access.

The "open source" label came out of a strategy session held in Palo Alto in reaction to Netscape's January 1998 announcement of a source code release for Navigator (as Mozilla). A group of individuals at the session included Todd Anderson, Larry Augustin, John Hall, Sam Ockman, Christine Peterson and Eric S. Raymond. They used the opportunity before the release of Navigator's source code to clarify a potential confusion caused by the ambiguity of the word "free" in English. The 'open source' movement is generally thought to have begun with this strategy session. Many people, nevertheless, claimed that the birth of the Internet, since 1969, started the open source movement, while others do not distinguish between open source and free software movements.

The Free Software Foundation (FSF), started in 1985, intended the word 'free' to mean "free as in free speech" and not "free as in free beer." Since a great deal of free software already was (and still is) free of charge, such free software became associated with zero cost, which seemed anti-commercial.

3. Advantages of Open Source Software

- **Lower software costs:** Open source solutions generally require no licensing fees. The logical extension is no maintenance fees. The only expenditures are for media, documentation, and support, if required.
- **Simplified license management:** Obtain the software once and install it as many times and in as many locations as you need. There's no need to count, track, or monitor for license compliance.
- **Lower hardware costs:** In general, Linux and open source solutions are elegantly compact and portable, and as a result require less hardware power to accomplish the same tasks as on conventional servers (Windows, Solaris) or workstations. The result is you can get by with less expensive or older hardware.
- **Scaling/consolidation potential:** Again, Linux and open source applications and services can often scale considerably. Multiple options for load balancing, clustering, and open source applications, such as database and email, give organizations the ability to scale up for new growth or consolidate to do more with less.
- **Support:** Support is available for open source—often superior to proprietary solutions. First, open source support is freely available and accessible through the online community via the Internet. And second, many tech companies are now supporting open source with free online and multiple levels of paid support. For example Liblime.
- **Escape vendor lock-in:** Frustration with vendor lock-in is a reality for all IT managers. In addition to ongoing license fees, there is lack of portability and the inability to customize software to meet specific needs. Open source exists as a declaration of freedom of choice.

- **Unified management:** Specific open source technologies such as CIM (Common Information Model) and WBEM (Web Based Enterprise Management) provide the capability to integrate or consolidate server, service, application, and workstation management for powerful administration.
- **Quality software:** Evidence and research indicate that open source software is good stuff. The peer review process and community standards, plus the fact that source code is out there for the world to see, tend to drive excellence in design and efficiency in coding.

4. Open Source Software for Libraries

4.1. Library Automation

4.1.1. Koha: Integrated Library System

Koha is a promising full featured open source ILS (integrated library system) currently being used by libraries all over the world. For those of you out there unfamiliar of what an ILS is, well, it is a system of keeping track of the operations of a library - payroll, expenses, purchases, and most importantly, keeping track of the various media being checked out by the librarians patrons. Many smaller libraries cannot afford to purchase, install, and maintain an ILS, and Koha is a perfect alternative. Koha is built using library ILS standards and uses the OPAC (open public access catalog) interface. In addition, Koha has no vendor-lock in, so libraries can receive tech support from any party they choose.

4.1.2. NewGenLib

NewGenLib (New Generation Library) is an Integrated Library Automation and Networking Solution Developed by Verus Solutions Pvt Ltd and The Kesavan Institute of Information and Knowledge Management, India. In March 2005, NewGenLib version 1.0 was released and versions 2.0 and 2.1 have come up later. On 9th January 2008, NewGenLib has been declared Open Source Software under GNU GPL Licence by the Verus Solutions Pvt Ltd, Hyderabad, India.

4.1.3. Evergreen

Evergreen ILS is another option when researching open source ILS options. Developed by Equinox Software, Evergreen is a robust, enterprise level ILS solution developed to be capable of supporting the workload of large libraries in a fault-tolerant system. It too is standards compliant and uses the OPAC interface, and offers many features including flexible administration, work-flow customization, adaptable programming interfaces, and because its open source, cannot be locked away and can benefit from any community contributions.

4.2. Digital Library

4.2.1. Greenstone Digital Library Software

The Greenstone digital library software is an open-source system for the construction and presentation of information collections. It builds collections with effective full-text searching and metadata-based browsing facilities that are attractive and easy to use. Moreover, they are easily maintained and can be augmented and rebuilt entirely automatically. The system is extensible: software "plugins" accommodate different document and metadata types. The aim of the Greenstone software is to empower users, particularly in universities, libraries, and other public service institutions, to build their own digital libraries.

4.2.2. DSpace

Dspace is a groundbreaking 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. DSpace design and developed by Massachusetts Institute of Technology (MIT) Libraries and Hewlett-Packard (HP). DSpace was designed as an open source application that institutions and organizations could run with relatively few resources. It is to support the long-term preservation of the digital material stored in the repository. It is also designed to make submission easy. DSpace supports submission, management, and access of digital content.

4.2.3. EPrints

Eprints is an open source software package for building open access repositories that are compliant with the Open Archives Initiative Protocol for Metadata Harvesting. It shares many of the features commonly seen in Document Management systems, but is primarily used for institutional

repositories and scientific journals. EPrints has been developed at the University of Southampton School of Electronics and Computer Science and released under a GPL license.

4.2.4. Fedora

Fedora open source software gives organizations a flexible service-oriented architecture for managing and delivering their digital content. At its core is a powerful digital object model that supports multiple views of each digital object and the relationships among digital objects. Digital objects can encapsulate locallymanaged content or make reference to remote content. Dynamic views are possible by associating web services with objects. Digital objects exist within a repository architecture that supports a variety of management functions. All functions of Fedora, both at the object and repository level, are exposed as web services. These functions can be protected with fine-grained access control policies. This unique combination of features makes Fedora an attractive solution in a variety of domains. Some examples of applications that are built upon Fedora include library collections management, multimedia authoring systems, archival repositories, institutional repositories, and digital libraries for education.

4.3. Web Publishing:

4.3.1. Wordpress

Wordpress started out as a quick, free, open-source solution blogging solution just a few years ago; today it is a perfect alternative to building a web site from scratch. In addition to being free to use (and easy to install), the Wordpress community has exploded, with thousands of users and programmers creating custom themes and plug-ins to completely change the way the software looks and operates. The most important aspect of the software is it's easy-touse interface and content management system. With it's visual rich editor, anyone can publish text and photos to the web site. Other options include multiple authors (with separate log-ins), built in RSS (Real Simple Syndication) technology to keep subscribers updated, and a comment system that allows readers to interact with the sites content. A fantastic way to communicate with patrons, staff, etc.

4.3.2. Drupal

Drupal is another open source web publishing option that allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website. Tens of thousands of people and organizations have used Drupal to power scores of different web

sites, including Community web portals, Discussion sites, Corporate web

sites, Intranet applications, Personal web sites or blogs, E-commerce applications, Resource directories, Social Networking sites.

4.4. Other Computer Programs:

4.4.1. Ubuntu

Ubuntu the most popular player in the Linux based operating system game. (Linux is the open-source answer to Microsoft's Windows operating system; Ubuntu is a modification of Linux). Ubuntu is a perfect solution for libraries who need to upgrade their older computers using outdated Windows or for bulk computer purchases requiring a new operating system. Many libraries feature computers for users to gain access to the internet, and that being the only function those computers serve. Why pay for all the unwanted things on Windows when you just need to get online? You might be a little scared at first of a new operating system, but just like anything else, the hardest part is getting started. Plus, there's plenty of Ubuntu installations help out there to give you a hand.

4.4.2. Open Office

OpenOffice.org is a multiplatform and multilingual office productivity suite and an open-source project. Compatible with all other major office suites, the product is free to download, use, and distribute. It includes the key desktop applications, such as a word processor, spreadsheet, presentation manager, and drawing program, with a user interface and feature set similar to other office suites. Sophisticated and flexible, OpenOffice.org also works transparently with a variety of file formats, including those of Microsoft Office, and the vendor-neutral OpenDocument standard from OASIS.

4.4.3. Firefox

Firefox is the Mozzila organizations answer to Microsoft's Internet Explorer web browser, and has taken the web by storm over the past few years as the biggest competitor to IE in quite some time. Firefox offers a much more secure browsing experience compared to IE (mostly because the majority if the population uses IE and that's who the bad guys are targeting). The biggest draw, however, is the modifications that can be made to Firefox through its many plug-ins, which can make using the net more constructive. Firefox runs on various versions of Microsoft Windows, Mac OS X and Linux.

4.4.4. Thunderbird

Thunderbird Firefox's little brother program, Thunderbird, is the Mozilla foundations opensource alernative to Microsoft's Outlook Express. The program works exactly like Outlook, providing you with a secure and safe desktop email solution. And just like Firefox, the open source programming community has created free add-ons to make the Thunderbird email client customized to your liking. If you absolutely need a desktop email client (as opposed to a web-based email client like the recommended Gmail), then Thunderbird is the open source program you need.

4.4.5. GIMPshop

GIMPshop is a modification of the free/open source graphics program GNU Image Manipulation Program (GIMP), intended to replicate the feel of Adobe Photoshop. Its primary purpose is to make users of Photoshop feel comfortable using GIMP. It shares GIMP's feature list, customisability, and availability on multiple platforms, while addressing some common criticisms regarding the program's interface: GIMPshop modifies the menu structure to more closely resemble Photoshop and adjusts the program's terminology to match Adobe's. In the Windows version, GIMPshop uses a plugin called 'Deweirdifyer' to

combine the application's numerous windows in a similar manner to the MDI system used by most Windows graphics packages. Since March 2006, it supports Photoshop plugins, through a host plugin that can run on Microsoft Windows or Linux. All of GIMP's own plugins (filters, brushes, etc.) remain available.

4.4.6. NVU

Nvu (*"N-view"*) is a discontinued WYSIWYG HTML editor, based on the Composer component of Mozilla Application Suite and Gecko 1.7. It is a common WYSIWYG editor for Linux and is intended to be an open source equivalent to proprietary software like Microsoft FrontPage and Macromedia Dreamweaver. As a WYSIWYG editor, it is designed to be easy for novice users and does not require any knowledge of

HTML or CSS to use. The project was started by and sponsored by Linspire. Linspire hired Daniel Glazman, former Netscape Communications Corporation employee and CEO/Founder of Disruptive Innovations, to be lead developer. Nvu is available for Linux, Mac OS X and Microsoft Windows, and it can be built successfully on any platform with the Netscape Portable Runtime.

4.4.7. PDF Creator

The PDF ("portable document format") file is an industry standard format that everybody uses everyday. The purpose of creating a PDF file is usually to provide an important document for display that cannot be modified by the reader (unless permission is given). Many programs exist that will enable you to create your own PDF files, but they require you to spend money, which is not in our budget. Instead, we're going to use the open-source PDF creator to take our Open Office files and convert them into professional PDF documents.

5. Selection criteria of open source software

Evaluation of open source software is different from proprietary programs. A key difference for evaluation is that the information available for open source programs is usually different than for proprietary programs; source code, analysis by others of the program design, discussion between users and developers on how well it is working, and so on. Often proprietary programs always hide all information from users and only allow running the software. Following criteria's can be adopted for open source software selection:

5.1. Open Source Software's on the WWW

Most convenient option to identify particular software for your library need is to ask professional friends who have experience in using open source softwares. You can directly contact other libraries in your locality or post a message in any popular email discussion forum of librarians. Certain open source softwares are highly popular among librarians community, for example Greenstone digital library software is a favorite candidate for the libraries who make use it for the collection and organization of digital materials. Librarians can select the software without much effort, if more popular software's are available for various library purposes. Websites which provide detailed listing of open source software are:

- Free Software Foundations software directory (www.fsf.org)

- UNESCO Free & Open Source Software Portal (www.unesco.org) • SourceForge (http://sourceforge.net/)

5.2. Open source licenses

Open source licenses are assure users freedom to use, copy, improve and distribution of software. GPL is the most popular license for free and open source software and provides feasible terms of use. Using GPL license, a user can modify the software without the permission of its creator. At the same time BSD license impose certain

restrictions on modification of software without the permission of its developer. If you have decided to choose the software with non General Public License, check the license if it contains any un-acceptable clauses.

6. Conclusion

So, it seems that there are some very commanding solutions available today that could be used to create a much more resourceful library. By using open source software 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. In addition, this free software is constantly being updated, changed, and customized to meet the library's needs. While all of this is fine and dandy, and sounds like the win-win solution for your library, there are still pitfalls and hurdles we'll need to overcome. Hopefully this article provides some introductory information as to how to wean your library off of traditional computing products and dive into the pool of open source resources available today.

Software has undergone a remarkable evolution since its inception. One such instance where evolution has occurred is with type of software in terms of ownership and licensing actions. Initially, proprietary software which was the only option for the stakeholders were later replaced by open and free software. This is due to the issues regarding proprietary software which created a need for more flexible software which led to the development of free and open source software. A comparative study reflects the benefits of free and open source software over proprietary in terms of virus susceptibility, license agreement, transparency, technical support, resource requirement, prices and additional expenses. With these pre-requisites, an investigation was carried out in one of the leading educational institution in order to explore the strengths of open and free software verses proprietary software. The investigation results indicate flexibility and easiness in developing applications with free software in lieu of proprietary software.

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