



PROFESSIONAL CHALLENGES IN IMPLEMENTING OF OPEN SOURCE SOFTWARE IN UNIVERSITY LIBRARIES

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ABSTRACT:

Explains the meaning of the term open source software (OSS) and OSS, explains some of them, gives specific explanations and describes in detail some important points regarding the explanation of OSS. It discusses the reasons why libraries and libraries need OSS models in the current situation. It discusses in detail the important aspects of OSS development and library and open-source and usability. The document sets out the key features of OSS and the criteria for selecting the right OSS according to individual needs. It describes the importance of OSS, which sheds light on important features of software, features, etc., in a special context of the popular OSS currently used in the Indian library environment. Serious issues and challenges in the OSS environment are also discussed.

INTRODUCTION:

With the development of ICT, open source software (OSS) came into existence. The term "open source" means software that contains the original source code, which is used to create it so that users can modify it to suit their needs. It also includes the right of redistribution; So there may be products that are based on other open source products. The software can be free, developers or distributors may charge for services including specialized programming, installation, training and technical assistance. In general, the source code of the OSS is widely accessible, freely available, and reusable. The most popular source license, the General Public License (GPL), allows the full use and reuse of source code.

Certificates have been issued by the Open Source Initiative indicating that the source code of the computer program has been made available to the general public free of charge. The rationale for this movement is that a large group of programmers, not related to ownership or financial gain, will offer a more useful and bug-free product for everyone to use. While relying on peer-reviewed concepts to detect and fix bugs in program code, this process does not use commercially developed and packaged programs. Programmers on the Internet forcibly read, redistribute, and modify source code for the extended evolution of the product, sharing information through the open source community speed up the process of removing bugs and improvement in software.

The word 'software' means two different but related things; Source code: A set of human-readable and understandable instructions, including a 'recipe' from which an executable program can be made, and an object code: an actual executable program compiled of machine-readable source code. It is assigned to the computer's microprocessor to perform various operations. Advocates of what we think of as an open source movement added the following terms before considering software as open source.

USES OF OPEN SOURCE MODEL IN LIBRARIES:

The basic idea behind open source is quite simple; Software develops when programmers can read, redistribute, and modify source code for pieces of software. People fix it, people adapt it, and people fix bugs. And it can happen at speeds that are surprising if one is accustomed to the pace of traditional software development. OSS also helps to take care of serious budget cuts, increasing demand for services, lack of adequate staff, etc.

The open source model librarian gives us the ability to create software that we always want. Compliant, interoperable, extensible and scalable software does what we want it to do: help customers find information quickly, conveniently, where it doesn't exist. Choose open source because you have the freedom to use, modify, or distribute it the way you want. Remember, libraries are expected to last longer than vendors. Sellers may not support the version you sold some time ago. Or they may go out of business. In this case, all your work and investment is wasted. You may be forced to migrate to another version or software. With open source, you know what's in it. You can tweak it yourself or rent it to people but then you always have it. You can build this to develop the evolving needs of your library.

ADVANTAGES OF OPEN SOURCE SOFTWARE:

1. **Low Software Cost:** Open source solutions generally do not require a license fee. Logical extension no maintenance fee. The cost is only for media, documentation and support if necessary.
2. **Easy to Manage Software Licence:** Get the software once and install it as many times as you want. No compliance, tracking or monitoring is required to comply with the license.
3. **Low Hardware Cost:** In general, Linux and open source solutions are neatly compact and portable, and as a result require less hardware energy to perform similar tasks on traditional servers (Windows, Solaris) or workstations. The result is that you can get it with less expensive or older hardware.
4. **Scaling / Association Potential:** Again, Linux and open source applications and services can often be overwhelming. Many options for load balancing, clustering and open source applications, such as databases and emails, give organizations the ability to measure new growth or combine it to do more or less.
5. **Support:** Support is available for open source which is much better than proprietary solutions. First, open source support is available free of charge and accessible through the online community via the Internet. And second, many tech companies are now offering free online and open source support with multiple levels of paid support.
6. **Quality Management:** Evidence and research show that open source software is good content. The fact that the peer review process and community standards, as well as the source code for viewing the world is out of reach, tends to excel in design and functionality in coding.

OPEN SOURCE SOFTWARE FOR LIBRARIES:**A. Library Automation:**

1. **Koha Integrated Software:** Koha is a promising fully featured open source ILS (Integrated Library System) currently being used by libraries around the world. For those of you who don't know what ILS is, it's a system for tracking the functioning of a library - tracking payroll, expenses, purchases, and most importantly, checking out various mediums. Librarian Patron. Many small libraries cannot afford to buy, install and maintain ILS, and Koha is a perfect option. The Koha Library is built using ILS standards and uses the OPAC interface. In addition, Koha does not have vendor-locked in, so libraries can get technology support from any party they choose.
2. **New Gin Lib:** NewJinlib (New Generation Library) is an integrated library automation and networking solution developed by Veras Solutions Pvt. Ltd. and Kesavan Institute of Information



and Knowledge Management, India. In March 200 In, NewsGenLib version 1.0 was released, followed by versions 2.0 and 2.1. On January 9, 2008, NewsinLibla Verus Solutions Pvt. Ltd., Hyderabad, India announced open source software under the GNU GPL license.

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 designed to be able to support large library workloads in a fault-tolerant system. It is also compliant with the standards and uses the OPAC interface and offers many features including flexible administration, work-flow customization, customizable programming interface and its open source, cannot be locked and can benefit any community contribution.

B. Digital Library:

1. **General Digital Library Software:** The Greenstone Digital Library software is an open-source system for the construction and presentation of information collection. It creates attractive and easy-to-use collections with effective full-text search and metadata-based browsing features. Moreover, they are easily maintained and can be augmented and fully auto-regenerated. The system is extensible: software "plugins" include various document and metadata types. The goal of Greenstone software is to enable users to create their own digital libraries, especially in universities, libraries and other public service organizations.
2. **DSpace:** DSpace is a ground breaking digital organizational repository that captures, stores, indexes, saves and redistributes intellectual product digitally in the university's research faculty. It manages and distributes digital items created by digital files and allows the creation, indexing and retrieval of relevant metadata for finding and retrieving items. DSpace is designed and developed by the Massachusetts Institute of Technology (MIT) Library and Hewlett Packard (HP). DSpace was designed as an open source application that can run organizations and institutions with relatively few resources. This is to support the long-term protection of the digital material stored in the repository. It is designed to facilitate submission. DS supports space submission, management and access to digital content.
3. **EPrint:** EPrints is an open source software package for creating open repos access repositories that comply with the Open Archives Initiative Protocol for metadata harvesting. It shares many of the features commonly found in document management systems, but is mainly used for institutional repositories and scientific journals. The e-prints have been developed at the Southampton School of Electronics and the University of Computer Science and are published under a GPL license.
4. **Fedora:** Fedora offers flexible service-based architectures for open source software organizations to manage and distribute their digital content. At its core is a powerful digital object model that supports multiple views of each digital object and the relationship between the digital object. Digital objects can encapsulate locally managed content or refer to remote content. Dynamic views are possible by associating web services with objects. Digital objects exist in repository architectures that support a variety of management tasks. All of Fedora's functions, both at the object and repository level, are exposed as web services. These functions can be protected by a micro access access control policy. This unique combination of features makes Fedora an attractive solution across different domains. Some examples of applications built on Fedora include library archive management, multimedia authoring systems, archival repositories, organizational repositories, and digital libraries for learning.

C. Web Publishing

1. **Wordpress:** WordPress started a few years ago as a fast, free, open-source blogging solution; Today it is a perfect option to build a website 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 software works and the way it works. The most important part of the software is the 2G interface and content management system. With Visual Rich Editor, anyone can publish text and photos on a website. Other options include multiple authors, built into RSS (Real Simple Syndication) technology to keep customers up to date, and a comment system that allows readers to interact with site content. A fantastic way to interact with patrons, staff, etc.

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 variety of content on a website. Thousands of people and organizations have used the power scores of various websites, including community web portals, discussion sites, corporate websites, intranets, applications, personal websites or blogs, e-commerce applications, resource directories, social networking sites.

ISSUES AND CHALLENGES:

The library database should be published on the Internet, meaning that all modules should be web-based and network-centric. Members can view objects from home or from a remote location. Library staff can enter data from remote and diverse locations in India. If the library maintains its database and dynamic website on a LAN or single machine (data mandatory) it will lag behind the others. In the case of open source, the library will have to work hard to publish through its ISP. Only static website and hosting is different than hosting dynamic website on some ISPs, because, the code of others is not so easy to understand. Once someone publishes someone's data on the Internet, authentication and authenticity security audits should be done. Extra caution should be exercised in the case of open source software. Many libraries in India are managing their databases on LAN or local single PCs. This is not a proper automated system; you should switch to the latest technology. It is also made clear here that all the popular software in India has a web based architecture, not just open source.

For any software, first of all, we should look at publishing on the Internet with ISP with our organization's computer infrastructure, according to which one should choose either open source or commercial software. The platform can be Linux or Windows. LMS can be anything; Open source or proprietary but of course, the OS or any software cannot suggest isolation like LAN or within the four walls of the library. Any solution (open, free or closed) will require a server, network infrastructure, manpower to handle the installation, alignment and alignment of the system process (library process here) and training of the system and staff and users. From now on, libraries are meant to survive for generations; The ideal software for a library would be one whose developers have survived for generations. Not just sustainability but keeps developing software with new needs and the best technology available in time. The total cost of ownership (TCO) is higher in the case of open source solutions. If one considers software installation, server setup, training, AMC, hosting, security, follow-up, customization, the cost will be higher. In terms of overall implementation, the cost of software is negligible. One should not worry about free or closed software; The purpose should be appropriate information system solution.

OPEN SOURCE IS THE DIFFERENCE:

Open source has been a mystery word in the library community for many years. We've heard the hype: open-source software is free, more reliable, more secure, boasts faster development cycles, and is just easier than proprietary software. Here are some reasons why open source is a particularly attractive solution for libraries. Open source software is free; the library will only provide necessary product support and training (if any). Software functions are paid only once to make open source software highly cost-effective. Libraries that use open-source software benefit



from many advanced technology solutions that allow them to develop if they still can't afford it. Open source enables the library to be innovative and collaborative. They cannot download and use free open source software for free, but if the results are redistributed for free, they can change them properly.

SUPPORT SELECTION:

In the proprietary software development model, one pays a high license fee to use the software. If the vendor does not provide sufficient support or does not give the client the freedom to customize and modify the software to meet their needs, changing vendors means switching software. And then it's about moving data from one vendor to another: with open-source software, everyone is supporting, it's easy to switch to another service provider or migrate to a home solution. Further, the open-source software development model is the unique identification and asset of data.

CONCLUSION:

The pace has picked up since the Open Archives Initiative (OAI) launched eprint.com in 2000. OSS includes an interface that makes it easy for people to create their own library collections. The archive itself can be created and served from the user's own web server or on a remotely shared digital library host. Existing users can easily create existing style archives from content on the web or from their local files (or both) and archives can be updated and new ones can be added at any time. The OSS has a lot of potential for libraries and information centres, and there are numerous projects including Koha, Newgenlib, Greenstone, DSpace, Ganesh, etc. that demonstrate its efficiency in this regard. This gives library staff the option to actively participate in development projects, and this investment can take many forms, such as reporting bugs, suggesting enhanced suggestions, and checking for new versions. Currently available OSS projects include application areas ranging from traditional library management systems to innovative areas such as Greenstone and DSpace that complement traditional systems. DSpace, EPrints, Greenstone and Koha are the most widely used OSS that are widely used in India and the world due to their flexible search, browsing, phrases and almost zero maintenance features.

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