OPEN SOURCE SOFTWARE: NEW AVATARS IN PRICING ENVIRONMENT

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ABSTRACT

In the Information era, to avoid obsolescence of information, professionals are applying advanced technologies to enable the user community to get right information at the right time and open source software is one such solution through which users have the ability to run, copy, distribute, study, change, share and improve any program. This paper highlights the various types of open source software with their important feature. A tabular presentation has been made to give an idea of OSS with their platform, database, and license availability.

Keywords: Open Source Software; Content Management Software; Digital Content Management; Integrated Library Management Software; Web Content Management Software

1. Introduction

The Open Source Initiative (OSI) is a non-profit corporation with global scope formed to educate about and advocate for the benefits of open source and to build bridges among different constituencies in the open source community. One of our most important activities is as a standards body, maintaining the Open Source Definition for the good will of the community. The Open Source Initiative Approved License trademark and program creates a nexus of trust around which developers, users, corporations and governments can organize open source cooperation. According to **The Open Source Research Community**, Open Source Software is described as "software for which the human readable source code is made available to the user of the software, who can then modify the code in order to fit the software to the user's needs".

Open Source Software is software for which the source code is freely available for anyone to see and manipulate. The OSS development models gives organizations a new option for acquiring and implementing systems, as well as new opportunities for participating in digital preservation projects.

The Mission of Open Source Software is:

1. To harnesses the power of distributed peer review and transparency of process.
2. To provide better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in.

2. Functionality behind the Open Source Software (OSS)

The open source software must act in accordance with following criteria:

1. **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 programs from several different sources. The license shall not require a royalty or other fee for such sale.

2. **Source Code** - The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

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

4. **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 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.

5. **No Discrimination Against Persons or Groups** - The license must not discriminate against any person or group of persons.

6. **No Discrimination Against Fields of Endeavor** - The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

7. **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.

8. **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.

9. **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.

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

The study presents the most significant OSS used for various purposes with their salient technical descriptions.

3. Content Management Software (CMS)

A **content management system** (CMS) is a collection of procedures used to manage work flow in a collaborative environment. They are the tools for managing

content, usually on a website, that separates the design, interactivity, and content from one another to make it easier for content authors to provide content. It is a computer application to create, edit, manage, search and publish various kinds of digital media and electronic text. It enables a variety of centralized technical and de-centralized non-technical staff to create, edit, manage and finally publish in different formats, variety of contents like text, graphics, video, documents etc will being constrained by a centralized sets of rules, process and workflows that ensure coherent validated electronic content.

Apache Lenya (http://lenya.apache.org)

Database – **Licence** – AL **Platform** – Java, XML

Features - Comes with revision control, multi-site management, scheduling, search, WYSIWYG editors, and workflow

aqua CMS (http:///www.aquacms.net/)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Allows users to edit pages in real time with what you see is what you get previews

Bricolage (http://bricolage.cc)

Database – PostgreSQL **Licence** – BSD **Platform** – PHP

Features - Create, manage, publish the vast library content of any organization

Cambio (http://www.cambiocms.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Relies on in-page editing of website, which means user don't have to open a separate administrator page to edit pages

Cherry (http://www.cherry-cms.de)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Can be used for each website and for customer management

CiviCRM (http://civicrm.org)

Database – MySQL **Licence** – **Platform** – PHP

Features - Gives the tools to connect, communicate and activate supporters and constituents

CM Simple (http://cmsimple.dk)

Database – Flat-file Database **Licence** – AGPL **Platform** – PHP

Features - Recommended for sites with text contents less than 2 MB-that is about 1000 pages of text (about 2,000 characters per page)

Cyclone3 (http://www.cyclone3.org)

Database – MySQL **Licence** – GNU **Platform** – PERL

Features - Extremely flexible open source framework designed for development of CM systems and custom applications developed for commercial purposes

Daisy (http://www.daisycms.org)

Database – MySQL **Licence** – AL **Platform** – Java

Features - Used at major corporations for intranet knowledge bases, product or project documentation and management of content rich websites

dotCMS (http://www.dotcms.org)

Database – PostgreSQL **Licence** – GNU **Platform** – Java

Features - Build/manage websites, content and content driven web applications and supports virtual hosting

Drupal (http://drupal.org/node/9068)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Used as backend system for many different types of websites, ranging from small personal blogs to large corporate and political sites

e107 (http://e107.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Create and manage websites or community portals

eZ Publish (http://ez.no/)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Supports the development of customized web applications

FROG (http://www.madebyfrog.com)

Database – MySQL/SQLite **Licence** – AGPL3 **Platform** – PHP5

Features - Simplifies content management by offering an elegant user interface, flexible templating per page, simple user management and permissions, as well as the tools necessary for file management

ImpressCMS (http://www.impresscms.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Build and maintain dynamic websites

JOJO (http://www.jojocms.org)

Database – **Licence** – GNU **Platform** – PHP

Features - Provides a framework for developers to build websites and an administration interface for editing page content

Joomla (http://www.joomla.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Publish content on the world wide web and intranets

Mambo (http://mambo-foundation.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Create and manage websites through a simple web interface

MiaCMS (http://miacms.org)

Database – MySQL **Licence** – GNU2 **Platform** – PHP, JAVA

Features - Used to build websites of all shapes, sizes and scenarios

Midgard (http://www.midgard-project.org)

Database – MySQL **Licence** – LGPL **Platform** – PHP

Features - Provides an object-oriented and replicated environment for building data-intensive applications

MODx (http://www.modxcms.com)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Publish content on the world wide web and intranets

Nuxeo CPS (Collaborative Portal Server) (http://www.cps-project.org)

Database – ZODB **Licence** – GNU **Platform** – Python

Features - Used as an intranet and extranet sever, as a document publishing system, and as a groupware tool for collaboration between separately located entities

OneCMS (http://www.insanevisions.com/onecms/)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Used by webmasters to manage their website, allowing the user to upload files, add content and various other features

OpenCMS (http://www.opencms.org)

Database – PostgreSQL **Licence** – GNU **Platform** – Java, XML

Features - Applicable with browser-based work environment asset management user management etc

OpusCMS

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Supports the publication of news articles in a most-recent-first format with an option to allow blogging and to add an RSS feed

phpCMS (http://www.phpcms.de/index.en.html)

Database – Flat-file Database **Licence** – GNU **Platform** – PHP

Features - Intends to simplify a lot of tasks for the maintenance of complex websites

PHP-Fusion (http://php-fusion.co.uk/news.php)

Database – MySQL **Licence** – AGPL **Platform** – PHP

Features - Stores a website's content & comes with a simple but comprehensive administration system

phpWCMS (http://www.phpwcms.de)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Robust and simple but yet powerful web based content management system use on thousands of websites all over the world

Plone (http://plone.org)

Database – MySQL/ PostgreSQL **Licence** – GNU **Platform** – Python

Features - Suited for an internal website or may be used as a server on the internet, playing such roles as a document publishing system and groupware collaboration tool

PyLucid (http://www.pylucid.org)

Database – MySQL/ PostgreSQL **Licence** – GNU3 **Platform** – Python

Features - It has a web-based installer, so the user needs no shell account and works on a standard web-server with python and one of the supported database engine

Quick.Cms (http://opensolutions.org/quick.cms.pl.10/html)

Database – Flat-file Database **Licence** – CCA 2.5 **Platform** – PHP

Features - Comprehensive and easy to customize CM System, helpful in website management, gives a possibility to easily extend functionality and change layout of website

Radiant (http://www.radiantcms.org)

Database – MySQL/ PostgreSQL **Licence** – MIT **Platform** – Ruby

Features - Designed for small teams with an elegant user interface, flexible templating with layouts, snippets, page parts, and a custom tagging language

razorCMS (http://razorcms.co.uk)

Database – Flat-file Database **Licence** – GNU **Platform** – PHP

Features - Simple, fast and security conscious installer

Scoop (http://scoop.kuro5hin.org)

Database – MySQL **Licence** – GNU **Platform** – PERL

Features - Focus is on collaborative publishing, its feature set is geared toward encouraging user contribution and participation

SilverStripe (http://silverstripe.com)

Database – MySQL/ PostgreSQL **Licence** – BSD **Platform** – PHP

Features - Provides an intuitive web-based administration panel, allowing any person to maintain their website without knowledge of mark-up or programming languages

SPIP (http://www.spip.net)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Known for its easy setup, use and maintenance, is widely used by networks of people in public and private institutions

TangoCMS (http://tangocms.org/)

Database – MySQL **Licence** – GNU2 **Platform** – PHP

Features - Help speed up the work flow of creating, and managing, a website that suits your needs

TYPO3 (http://www.typo3.com)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Offers full flexibility and extendibility while featuring an accomplished set of ready-made interfaces, functions and modules

WebGUI (http://www.webgui.org)

Database – MySQL **Licence** – GNU **Platform** – PERL

Features - Permits non-technically minded users to arrange content in pages and layouts, containing Assets which permit website visitors to view and interact with various types of data from basic articles to full-blown CMS and custom application

whCMS (http://whcms.burolaga.nl/)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Relies on in-page editing and simple content modules such as headers, text or file downloads are added, sorted and edited directly in the website pages

Xaraya (http://www.xaraya.com)

Database – MySQL **Licence** – GNU **Platform** – PHP, XML

Features - Shares basic ideas with PostNuke in the area of modularity and security and has been completely rewritten with a focus on separation between design and content in order to achieve a more modular and flexible product

XOOPS (http://www.xoops.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Uses a modular architecture allowing users to customize, update and theme their websites

Zena (http://zenadmin.org)

Database – MySQL **Licence** – MIT **Platform** – Ruby

Features - Creates website and easily update its content without taking the phone to reach your webmaster

4. Digital Library Content Management Software

Digital libraries are meant to exploit the facilities of information technology with the object to share resources available globally so as to render right information to the right user at the right time. These constitute the paradigm of information services for the end of 20th century and beginning of the 21st Century. The development of digital collections, the organization and creation of access mechanisms or metadata management benefit from the combination of processes of digital publication and the principles of information management.

DSpace (http://www.dspace.org)

Database – PostgreSQL **Licence** – BSD **Platform** – Unix

Features - Captures, stores, indexes, preserves and redistributes the intellectual output of a university's research faculty in digital formats

EPrints (http://www.eprints.org/)

Database – MySQL **Licence** – GNU **Platform** – Linux, Unix

Features - Easiest & fastest way to set up repositories of open access research literature, scientific data, theses, reports and multimedia & major leap forward in functionality giving more control & flexibility to repository managers, depositors, researchers and technical administrators

FEDORA-Flexible Extensible Digital Object Repository Architecture (http://www.fedora.info/)

Database – Web Access Server **Licence** – ECL **Platform** – XML, API

Features - Serve as a digital repository for a variety of use cases like digital asset management, institutional repositories, digital archives etc

GSDL (Greenstone Digital Library Software) (http://www.greenstone.org)

Database – Web Access Server **Licence** – GNU **Platform** – Unix,, Linux

Features - Provides a new way of organizing information and publishing it on the internet or on CD-ROM

5. Enterprise Content Management Software (ECMS)

An enterprise content management system (ECM) is content, documents, details and records related to the organizational processes of an enterprise. The purpose and result is to manage the organization's unstructured information content, with all its diversity of format and location. The system manages the content related to commercial organizations. The main objectives of enterprise content management are to streamline access, eliminate bottlenecks, optimize security and maintain integrity. It is a set of strategies, methods, tools and techniques used to capture, manage, store, preserves and deliver content and documents related to organizational processes.

Alfresco (http://www/alfresco.com)

Database – PostgreSQL **Licence** – GPL **Platform** – Java, JSP

Features - It is an open standard, design is geared towards users who require a high degree of modularity and scalable performance

Nuxeo (http://www.nuxeo.org)

Database – PostgreSQL **Licence** – LGPL **Platform** – Java EE

Features - Used to develop both web-based server applications and rich client applications

6. Integrated Library Management Software (ILMS)

An **Integrated Library System** (ILS), also known as a **Library Management System** (LMS), is an enterprise resource planning system for a library, used to track items owned, orders made, bills paid, and patrons who have borrowed. An ILS usually comprises a relational database, software to interact with that database, and two graphical user interfaces (one for patrons and one for staff). Larger libraries use an ILS to order and acquire, receive and invoice, catalog, circulate, track and shelve materials. Smaller libraries, such as those in private homes or non-profit organizations (like churches or synagogues, for instance), often forgo the expense and maintenance required to run an ILS

Avanti Library System (http://www.avantilibrarysystems.com/)

Database – **Licence** – **Platform** –

Features - Provide the library community with software products that are both simple to use and powerful

CDS Invenio (http://invenio-software.org/)

Database - MySQL **Licence** - GNU **Platform** – CERN

Features - Its flexibility and performance make it a comprehensive solution for the management of document repositories of moderate to large size

Evergreen (http://open-ils.org/)

Database –PostgreSQL **Licence** – **Platform** –

Features - Provide their public catalog interface as well as to manage back-of-house operations such as circulation, acquisition, sharing resources among group of libraries

Ganesha (http://gdl.itb.ac.id)

Database – MySQL **Licence** – GNU **Platform** –

Features - Manages the learning process for the trainees and the trainers and handles course administration (document, quiz, etc.)

KOHA (http://www.koha.org/)

Database – MySQL **Licence** – GNU **Platform** – Windows, Linux, Unix

Features - Allows libraries to manage reading groups, book clubs, and other community outreach programs

MyLibrary (http://dewey.library.nd.edu/mylibrary/)

Database – MySQL/ PostgreSQL **Licence** – GNU **Platform** – Unix, Linux

Features - Reduce information overload by allowing patrons to select as little or as much information as they desire for their personal papers

NewGenLib (http://www.newgenlib.com)

Database – PostgreSQL **Licence** – **Platform** –

Features - Supports multi-user and multiple security levels and allows digital attachments to metadata

Open Biblio (http://obiblio.sourceforge.net/)

Database – **Licence** – **Platform** –

Features - Easy to use, automated library system written in PHP containing OPAC, circulation, cataloguing, staff administration functionality

PMB (PhpMyBibli) (http://www.pmbservices.fr)

Database – MySQL **Licence** – **Platform** –

Features - Import and export of bibliographic records in different formats

VuFind (http://vufind.org/)

Database – **Licence** – **Platform** –

Features - Enable your users to search and browse through all of your library's resources by replacing the traditional OPAC

7. Web Content Management Software (WCMS)

A Web Content Management System is typically a software tool used by both technical and non-technical staff to manage the creation of structured web pages for a web based experience such as an Internet Website, Intranet or Extranet solution. It provides website authoring, collaboration, and administration tools designed to allow users with little knowledge of web programming languages or markup languages to create and manage website content with relative ease. It is a program that helps in maintaining, controlling, changing and reassembling the content on a web-page. It is a bundled or stand-alone application used to create, manage, store and deploy content on web pages.

TGS-CM (http://www.tgs-cm.org)

Database – MySQL **Licence** – GNU **Platform** – PHP

Features - Allows users to easily create smaller and medium scale websites, intranet-portals and business portals on the internet

Zikula (http://zikula.org)

Database – MySQL/ PostgreSQL **Licence** – BSD **Platform** – PHP/Smarty

Features - Creates an impressive dynamic website and provides with a site which can administer with a minimal amount of HTML knowledge through a web browser

8. Advantages of Open Source Software

1. OSS generally requires no licensing fees;
2. OSS can be obtained once and install it as many times and in as many locations as one need.
3. OSS is elegantly compact and portable and as a result less hardware power to accomplish the same tasks as on conventional servers or workstations.
4. OSS gives an organization the ability to scale up for new growth or consolidate to do more with less.
5. The availability of source code and the right to modify enables unlimited tuning and improvement of a software product.

9. Disadvantages of Open Source Software

1. It is not always easy to get OSS to work with other applications.
2. The decentralized distribution of OSS process is a disadvantage in some contexts, particularly for fixing bugs and problems, which become the responsibility of user if the OSS community doesn't mobilize to address the programs.
3. Lack of proper guidance on many OSS leads to lack of user documentation because development of the code enthuse many as compared to documentation.

10. Conclusion

The research, innovation and development in the open source software (OSS) is gaining momentum worldwide and it is evidenced from the various investigations/ studies that OSS are being used at wider scale globally. The future of the applications of OSS will certainly depends on customisation, service supports, comparability, interpretability and vibrant collaborations of research hands of organisations and groups of persons. As the society gradually and gradually moving towards transforming into the digital society, therefore, to cut the cost of software, the future of open source software is bright.

References

1. **BEBI** and **GULATI, DIPTI** (2010). Open Source Software: *A Better Options for Libraries. In* Visakhi P. et.al. Knowledge Management-Issues and Challenges. New Delhi: U-Day Publishers. P-160-167.
2. **DAVE, R.K.** and **DAS, TIRTH** (2010). Open source software for library management. *In* Pawan K. Gupta and Tirth Das (Eds). *Modern Trends in Library and Information Science.* Jodhpur: Scientific Publishers. P-290-304.
3. **KAUSHAL, K.GIRI** and **KIRTI, K.NIRGUDE** (2009). Open Source Content Management Software: *A Comparative*

Analysis. In E-Content Management: Challenges and Strategies, 7th International CALIBER 2009, Ahmedabad: INFLIBNET. P-184-193.

4. **SHANTA, L.MEITEI** and **PURNIMA DEVI** (2009). Open Source Initiative in Digital Preservation: The Need for an Open Source Digital Library Repository and Preservation System. *In* E-Content Management: Challenges and Strategies, 7th International CALIBER 2009, Ahmedabad: INFLIBNET. P-41-47.

5. **NAIK, UMESHA** and **SHIVALINGIAH, D.** (2009). Open Source Software for Content Management System. *In* E-Content Management: Challenges and Strategies, 7th International CALIBER 2009, Ahmedabad: INFLIBNET. P-225-239.

6. **SATYANARAYAN SHARMA.** (2010). Growth and development of open source software for libraries. *In* Pawan K. Gupta and Tirth Das (Eds). *Modern Trends in Library and Information Science.* Jodhpur: Scientific Publishers. P-389-409.

7. www.opemsource.org