

A COMPARATIVE STUDY OF CONTENT MANAGEMENT SYSTEMS: JOOMLA, DRUPAL AND WORDPRESS FOR WEB APPLICATION DEVELOPMENT

Mani Bhusan Roy

Ex-Student of Department of Library and Information Science

North Bengal University

Email - manibhusanroy84@gmail.com

Dr. Naresh Kumar

Librarian, Galaxy Global Group of Institutions

Dinarpur, Ambala

Email: reach4naresh@gmail.com

Abstract

CMS (Content Management System) is a software program that helps us to develop and maintain the website easier and faster way. These days there are several CMS available varying based on functionalities and platforms. Joomla, Drupal and Wordpress are the three most popular content management systems (CMS). All three are open source and built on PHP + MySQL and vary significantly in terms of features, capability, flexibility and ease of use. This paper discusses about comparative study of most widely used content management systems Joomla, Drupal and Wordpress. This study attempt to analyze each CMS on the basis of usage, design, performance, scalability, compatibility with different platforms, security purpose, and search engine visibility This study will help an individual or organization to choose an appropriate CMS for their specific web application and shows the good CMS will be helpful for users to include different features in the website using plugging and the widget.

Keywords: CMS (Content Management System), Joomla, Drupal, Wordpress.

1.0 Introduction

The term “open source” is a key distinction. It means the software’s source code is freely available for everyone to see and change (as opposed the source code for MS Word, for example), but it also has many wider implications. While proprietary software is created, distributed and maintained by a business, with open source software these tasks are handled by a community of developers and users (recently, for-profit consulting and development firms have also become important vehicles for support). Just how effective that community is at its job is an important consideration when choosing an open source CMS.

Open source content management systems are free in many ways. They’re free as in “free speech”—you can do what you wish with the product and the code behind it, extending and integrating it as you see fit. They’re free as in “free beer”—there’s no license cost for the software, and anyone can download and install them on a web server without cost, though you’ll likely need to pay for the server, or pay someone to install the system. And they’re free as in “free kittens”—that is, an open source CMS takes work. You’ll either need to put a lot of time into implementing and maintaining your system, or hire someone to do it for you. No CMS will magically design and write your whole site for you; that’s a job for humans.

Open source content management systems are also designed to be modular. When you download one you get the set of features a group of developers decided ought to be the base level of functionality, called the “core” of the system. But there’s a huge range of add-on modules that provide additional functionality for each CMS, and a rich network of developers working to create more. If there’s something you want for your website that the core CMS doesn’t already do, someone else has probably already built what you’re looking for—and, if not, you can build your own, or hire someone to build it for you.

There's a whole community of people who create add-ons, modify source code, and ask for and offer support. When you decide to install an open source CMS you become a part of that community. But there's an expectation that when you ask a question, you have at least some knowledge of the system; they're not going to do the work for you. If you don't have someone with technical skills on staff, you may want to hire someone to implement the CMS. And as we've noted before, if you're planning on building a simple site, the person you choose to implement the CMS is considerably more important than the CMS itself.

An open source CMS certainly isn't a cure-all; it may not even be the best option. But for many organizations, it can offer useful savings in time, money and resources.(Laura)

1.1 Content Management System

Content management System is a collection of advanced internet tools to help create, upload and manage online content. The main purpose of content management system is to provide the capability for multiple users with different permission levels to manage a website or section of the content. A CMS Consist of two element CMA (Content management Application) and CDA (Content Delivery Application). The CMA element allows to manage, the creation, modification and removal of content from web site. The CDA element uses and compiles that information to update the Web site.



Figure-1 Content Management system at a glance

At its most basic, a Content Management System (CMS) is a software program that makes building and maintaining websites faster and easier. Let's say you're using a site without a CMS—if you want to post an event and have that event show up in five different places on the site, you have to perform the same activity five separate times on five separate pages. With a CMS, you only have to post the event once—and any staff member can do it, regardless of their technical expertise.

1.2 How does this work?

Content management systems store the actual content (text and images) in a database. The system can then automatically pull the content out and show it on the appropriate pages based on rules you set up in advance. The ways you can organize it, and the types of rules you can use, depend on how structurally flexible the CMS is. This setup makes it easy for all your content administrator's—the staff members writing and publishing the actual information on the site—to create content without worrying about technical issues, or even knowing all the places the content should go.

Content Management Systems also separate graphic design from the content itself. This is accomplished through the use of "themes," or graphic design layers that control graphic elements, font and navigation styles, and page layouts for each page on the site. You simply choose a pre-packaged theme for your site, or create a theme that's completely customized to your own look and needs.

1.3 Category of Content Management System

The different of Content management system are as follows:

1.3.1 Joomla:

Joomla is a great Content Management System with a lot of flexibility and with an easy-to-use user interface those lots of people get intimidated about when they use the different option available in Joomla. It is one of the best and most widely used CMS applications as it is suitable for creating corporate websites or intranets, online magazines, community-based portals and more. It has been equipped with numerous built-in features as well as a large selection of extra modules and components which in turn enhance the value of website which the user is interested in creating.




1.3.2 Drupal

Drupal is freely available software that allows the user to publish and organized its own website. With the help of Drupal one can easily build different type of WebPages ranging from simple web blogs to large online communities. It is easy to customize the Drupal. It also provides built-in search tool and search-engine friendly URL's as an extra module, for discussion capabilities. It has been said that Drupal is the way to go for any website that is extremely high traffic and in demand.

1.3.3 Wordpress

Wordpress has been around since 2003 and is the most popular blogging software on the market. Over the last few years, Wordpress has also become the content management software of choice for non-blogging websites. Wordpress is definitely the world's most popular CMS. The script is in its roots more of a blog than a typical CMS.

Wordpress is a robust content management system that powers many online businesses. There are a number of distinct advantages for using Wordpress like SEO, easier management and many more. Wordpress is more than a Blogging platform and you can use it as a Website, social networking site (Buddypress), E Commerce site, Web directory and many more different uses of it.(Gupta)

			
	Joomla	Wordpress	Drupal
Website	joomla.org	WordPress.org	drupal.org
Latest version	3.4.1	4.1.1	7.36
License	Open Source	Open Source	Open Source
Supported databases	MySQL, PostgreSQL	MySQL	MySQL, PostgreSQL
Platform	PHP	PHP	PHP
Security			
Content Approval	✓	✓	✓
Email Verification	✓	✓	✓
Granular Privileges	✓	✓	✓
Authentication methods	LDAP, Custom	LDAP (plugin), Custom	LDAP (plugin), NTLM (plugin), Custom
Session Management	✓	☒	✓
SSL Compatible	✓	✓	✓
Login History	✓	☒	✓
Modifications History	☒	☒	✓

Support			
Commercial Support	✓	✓	☒
Developer Community	✓	✓	✓
Public Forum	✓	✓	✓
Plugin API	✓	✓	✓
Features			
Drag & Drop Content	✓	✓	☒
Image Resizing	✓	✓	☒
Multiple Upload	✓	✓	☒
Spellchecker	☒	✓	☒
Style Wizard	☒	☒	☒
Subscriptions	☒	☒	☒
Undo	☒	✓	✓
WYSIWYG Editor	✓	✓	
Extensible User Profiles	✓		✓
Interface Localization	✓	✓	✓
Performance			
Caching	✓	☒	☒
Load Balancing	✓	☒	✓
Database Replication	✓	☒	✓
Static Content Export	☒	☒	☒
Multilingual Content	☒	✓	✓
Multi-Site Deployment	☒	✓	✓
RSS (Content Syndication)	✓	✓	✓
Management			
Advertising Management	✓	☒	☒
Content Scheduling	✓	✓	☒
Inline Administration	✓		✓
Sub-sites / Roots	✓	✓	✓
Themes / Templates	✓	✓	☒
Web Statistics	✓	☒	✓
Web-based Translation	✓	☒	✓
Workflow Engine	☒	✓	✓
Interoperability			
FTP Support	✓	☒	✓
UTF-8 Support	✓	✓	✓
XHTML Compliant	✓	✓	✓
Built-in Applications			
Blog	✓	✓	✓
Contact Management	✓	☒	☒
Forum (Discussion)	☒	☒	✓
Document Management	☒	☒	
FAQ Management	✓	☒	☒
File Distribution	☒	☒	☒
Graphs and Charts	☒	☒	☒

Help Desk / Bug Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job Postings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Link Management	✓	✓	<input type="checkbox"/>
Mail Form	✓	<input type="checkbox"/>	<input type="checkbox"/>
My Page / Dashboard	✓	✓	<input type="checkbox"/>
Photo Gallery	<input type="checkbox"/>	✓	<input type="checkbox"/>
Search Engine	✓	✓	✓
Polls	✓	<input type="checkbox"/>	✓
User Contributions	✓	✓	✓
Web Services Front End	✓	<input type="checkbox"/>	✓
SEO Features			
Metadata	✓	✓	✓
SEO Friendly URLs	✓	✓	✓
Site Map	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.0 So Which CMS is Right for You?

It's a difficult question to answer. Apples and oranges are both fruit, but it's hard to quantify one feature or another that makes either better. The same holds true for Joomla, Drupal and Wordpress. It's easy for sitecreators to be passionate about one CMS or the other, depending upon the requirements of the user and ease of individual usage; anyone can be use as CMS. However perusal of the data available on the net, Wordpress has more uses as compared to Joomla and Drupal. (Sheokand)

3.0 Conclusions

Wordpress, Joomla and Drupal are the three most popular content management systems (CMS). All three are open source and built on PHP + MySQL. All three differ significantly in terms of features, capability, flexibility and ease of use. Joomla enables you to build a site with more structural stability and content than Wordpress, and has a fairly intuitive interface. Joomla is very useful if a user wants a standard website with standard capabilities – a blog, a static/dynamic front-end, a forum, etc. Joomla is a good option also for small to mid-tier commerce stores other than for something more powerful for organizational use, consider Drupal. Wordpress is often called a mini CMS. It isn't as powerful or capable as Drupal or Joomla, but is enough easy for any lay user. Wordpress is more suitable CMS for the users who want a simple, easy to use blogging solution that looks good and can accommodate multiple authors easily. If a user is building a much more complex site, then it should turn to Drupal first. Though it's harder to learn, it has much more flexibility to scale a site in terms of complexity. It also has the ability to scale up the very complex sites to be used for a variety of business needs. Free and often powerful, open source content management systems can help you create a powerful website in limited budget. Wordpress and Joomla are well suited to build smaller sites quickly, while Drupal support robust and complex functionality. Each CMS platform has a very strong developer community.

3.0 References

1. Drupal, www.drupal.org Retrieved April 1, 2017
2. Gupta, S., Gambhir, A., & Vijarana, M. (2016). A Survey for Selecting Best Content Management System for Web Application Development. *International Journal of Advanced Research in Computer Science and Software Engineering*, 6(5), 1-4. Retrieved April 10, 2017, from https://www.ijarcsse.com/docs/papers/Volume_6/5_May2016/V6I4-0404.pdf.
3. Islam, M., Islam, M., & Sagorika†, S. (2011). Content Management System (CMS): Application of Joomla to website development in Libraries and Information Centers. *International Seminar "Vision 2021: the role*

- of libraries for building digital Bangladesh”, 83-103. Retrieved April 09, 2017, from http://nazmul81.weebly.com/uploads/1/9/1/2/1912061/cms_nazmul.pdf
4. <http://drupal.org/documentation/customization/tutorials> Retrieved April 4, 2017
 5. https://www.google.co.in/search?hl=en&site=imghp&tbn=isch&source=hp&biw=1600&bih=789&q=content+management+system&oq=content+management+system&gs_l=img.12...0.0.1.145442.0.0.0.0.0.0.0.0.0.0...1ac..64.img..0.0.0.Erwrirq1MwI#hl=en&tbn=isch&q=drupal+logo&imgcr=S5n84njXRK6KAM: Retrieved April 03, 2017
 6. https://www.google.co.in/search?hl=en&site=imghp&tbn=isch&source=hp&biw=1600&bih=789&q=content+management+system&oq=content+management+system&gs_l=img.12...0.0.2.1028557.0.0.0.0.0.0.0.0.0.0...1ac..64.img..0.0.0.GkN13n5Ft-s#imgcr=yX9x-NC1HLZ1hM: Retrieved April 10, 2017
 7. https://www.google.co.in/search?hl=en&site=imghp&tbn=isch&source=hp&biw=1600&bih=789&q=content+management+system&oq=content+management+system&gs_l=img.12...0.0.1.145442.0.0.0.0.0.0.0.0.0.0...1ac..64.img..0.0.0.Erwrirq1MwI#hl=en&tbn=isch&q=drupal+logo&imgcr=S5n84njXRK6KAM: Retrieved April 9, 2017
 8. https://www.google.co.in/search?hl=en&site=imghp&tbn=isch&source=hp&biw=1600&bih=789&q=content+management+system&oq=content+management+system&gs_l=img.12...0.0.1.145442.0.0.0.0.0.0.0.0.0.0...1ac..64.img..0.0.0.Erwrirq1MwI#hl=en&tbn=isch&q=joomla+logo+transparent&imgcr=HWB--egBymtA8M: Retrieved April 8, 2017
 9. Joomla, www.joomla.org Retrieved April 10, 2017
 10. Joomla CMS, <http://www.wilsonmar.com/joomla.htm> Retrieved April 11, 2017
 11. Pate, S. %, Rathod, V. ..., & Prajapat, J. B. (2011). Performance Analysis of Content Management Systems- Joomla, Drupal and Wordpress. *International Journal of Computer Applications*, 21(1). Retrieved April 10, 2017, from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.206.3027&rep=rep1&type=pdf>
 12. Sheokand, R. %, & V. (2015). A Comparative Study of Content Management Systems: Joomla, Drupal and Wordpress. *International Journal of Advance Research In Science And Engineering*, 4(1), 176-183. Retrieved April 7, 2017, from <https://www.ijarse.com/images/fullpdf/197.pdf>.
 13. Wordpress, www.wordpress.org Retrieved April 5, 2017