A Comparative Study of Open Source Content Management Systems

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Abstract- *A CMS is a software tool that allows you to create, edit, and publish content. While early CMS software was used to manage documents and local computer files, most CMS systems are now designed exclusively to manage content on the Web. There are many CMS available in Open Source but this paper deals with the comparative study of the popular Open Source CMS like wordpress, Drupal , Joomla , Typo3 , Quick.Cms . The goal of this comparative study is based on the criteria like Easy design modification , complex less administration, Good technical support, Large number of plugins,Speed and efficiency, Good SEO support, Extended functionality*

Keywords- Management system(CMS), Wordpress , Drupal, Joomla , Typo3

I. INTRODUCTION

The goal of a CMS is to provide an intuitive user interface for building and modifying webpage content. Each CMS also provides a web publishing tool that allows one or more users to publish updates live on the Web. The editing component is called the content management application (CMA), while the publishing tool is called the content delivery application (CDA). These two components are integrated together in a CMS to streamline the web development process. Content management systems are available as installable applications and web-based user interfaces.

The following gives an introduction about the various CMS:

Word Press - free web software designed for creating template-based websites or blogs.

Joomla - A flexible web publishing tool that supports custom databases and extensions.

Drupal - An open source platform often used for developing community-based sites.

Typo3- is used mostly by more advanced programmers who are looking for a comprehensive application with much functionality.

I. WORD PRESS

Word Press is definitely the world's most popular CMS. The script is in its roots more of a blog than a typical CMS. For a while now it's been modernized and it got thousands of plugins, what made it more CMS-like. The script as an Open Source is the first choice for most bloggers, but it can also be successfully used for designing simple websites. You can download and view the CMS at www.WordPress.org.

Advantages

Easy to use:

Word Press does not require PHP nor HTML knowledge unlike Drupal, Joomla or Typo3. A preinstalled plugin and template function allows them to be installed very easily. All you need to do is to choose a plugin or a template and click on it to install. It's good choice for beginners.

Community:

To have a useful support, there must be a large community of users, who will be a part of e.g. a discussion board.

Plugins:

The script has over dozen thousand of plugins available on its website. They are the reason Word Press is considered a CMS, not only a blogging script. Strong majority of the plugins is available for free.

Templates:

On the script's homepage you can view thousands of graphics templates that can change your website's look. You can find there both free and paid templates. The paid ones are often more advanced as well as more interesting.

Menu management:

Word Press menu management has extended functionalities that can be modified to include categories, pages, etc.

Non-standard fields:

You can easily add fields to forms by yourself or using plugins. It will allow your blog or subpages to have additional labels, categories or descriptions.

Disadvantages

Modification requires knowledge of PHP:

Operations like removing a date field require some understanding of PHP language. It is the case for most of such modifications.

Graphics modification requires knowledge of CSS and HTML:

Although there are plenty templates available on the homepage, most of them are very alike. To create a unique look, you need to know CSS and HTML.

Plugins and efficiency:

To compete with Joomla! Or Drupal, WordPress needs plenty of plugins to be installed. Unfortunately these plugins influence the script's efficiency and not in a good way. Another problem arises when you need to choose a plugin for a specific functionality. Among all the thousands of plugins, most of them have their clones. It means, that any given functionality can be added by several different plugins created by different authors. Sometimes choosing the right one may take quite some time.

PHP security:

The script is not protected as well as other applications. It all depends on how sensitive is the additional content of your page.

Tables and graphics formatting:

Modifying tables or graphics format can be more complicated than in other applications like Quick.Cms or Joomla.

SQL queries:

Queries can be complex since all additional non-standard fields that make WordPress a CMS, require additional syntax.

Conclusions

Word Press is a very good script to create a simple website. It is one of the simplest to use (definitely not simpler than Quick.Cms though) of all solutions available on the internet. It's very good choosing for a beginner's. Advanced users with advanced needs would have to install many plugins to have what is a standard for joomla or Drupal.

II. DRUPAL

Drupal became one of the most comprehensive CMS systems available. The script has a very specific programming environment, that could be described better as a programmer's platform than a simple CMS script.The script as an Open Source is chosen by many programmers who outgrew simpler scripts like Quick.Cms or WordPress.The CMS can be downloaded and viewed at www.drupal.org.

Advantages

Includes a lot of functionality:

Drupal includes lot of functionalities like: advanced menu management, polls management, graphics modification tool, user management and much more. These functions make it possible to create simple or advanced websites, blogs, discussion boards, social networking pages, etc.

Variety of content types:

Drupal is famous for allowing ,creating and managing many content types, like: videos, polls, user management, text, blogs, podcasts, statistics, and others.

Advanced users management:

An administrator can create new user accounts and establish their permission rights. Users can be divided into groups and can be given assignments. They can be given permissions to manage parts of your website.

Graphics management:

The script includes capabilities of design elements editing. Available templates and themes make for a good start. Predefined page functions configurations make it easy to create both a simple as well as more complicated page

configurations.

Page content management:

Drupal allows you to categorize your content through URL addresses, paths, making your own lists. This structure makes for easy management, search and reuse of the content.

Plugins:

The script has several thousands of plugins available on its website. Since Drupal is an Open Source, you can use as well as create your own plugins.

Support:

On the Drupal homepage, there's a documentation, well developed discussion board, chat, mailing list, etc. You can find there plenty of information and help concerning management and modification of the script.

Disadvantages

Installation and modification:

The script is not very user-friendly and requires advanced knowledge to install and modify. Quick.Cms, WordPress and even Joomla are simpler to use, even though they do not offer functionalities as rich as Drupal does.

Compatibility:

Drupal have plenty of new solutions. If you're used to older systems, getting used to this script will take some time.

Efficiency:

When considering scalability and efficiency, Drupal is far behind other scripts like Quick.Cms or WordPress. If your website is very large, the script will generate a big server load. It is caused by the big range of possibilities provided by Drupal. There are however plugins that load a website to the server's cache, what decreases the server load.

Conclusions

Drupal is an advanced CMS system offering plenty functions, that in other scripts require installing many plugins. Unfortunately it means that any interference in the script's code requires advanced knowledge of PHP and HTML languages as well as CSS. Luckily for those with at least basic knowledge of these languages, there's a very good technical

support.

III. JOOMLA

When it comes to complexity, Joomla places somewhere between simple WordPress and comprehensive and advanced Drupal.The Open Source script is very popular among programmers who create even quite advanced websites with it.The CMS can be downloaded and viewed at www.joomla.org.

Advantages

Easy to install:

Joomla! is quite simple to install. It takes only about ten minutes from downloading to having a working script on a server. It is not as easy as Quick.Cms or WordPress, but is still much simpler than Drupal.

Plugins:

The script has several thousands of free plugins available at the homepage. WordPress may have even more, but to make it as functional as Joomla!, you have to instal dozen or so plugins to start with.

Support:

There is abundance of programmer's tools and tutorials available for users. There's also an extensive discussion board.

Navigation management:

The script has a comprehensive navigation system, that can successfully manage several hierarchies. It allows to easily manage a site even with couple hundred subpages.

Good looking URLs:

Links generated by the script are very friendly and make for better SEO positioning.

Updates:

When the page design is ready, there will come a time to update the script to a newer version. You can do it from web browser.

Advanced administration:

Administration panel provides many functions that can be intimidating in the beginning. In time, however, you can master most of them to use the full potential of the script.

Disadvantages

Limited adjustment options:

Even though Joomla! has many modules and templates, it is always missing something for the more advanced users. It's still better than in case of WordPress.

Server resources and efficiency:

Modularity and expendability often means bigger demands on server parameters. This certainly is the case. Still, if the website is not too large and there will not be thousands of visitors, there should be no problems, at least not in the beginning.

Paid:

plugins Some of plugins and modules for Joomla! are paid, unlike for e.g. WordPress or Drupal. It pays to spend some time to make sure you won't have to buy an addition that is free in some other script.

Plugins compatibility:

There may occur some frustrating compatibility issues between some of the plugins. It may turn out that it will be impossible to get some functionalities without some serious work on the PHP code.

First contact:

Many users, beginners especially, are terrified by multitude of possibilities and functions. So if the website is to be simple and the user or the client is just beginning, it would be wiser to use Quick.Cms or WordPress.

Conclusions

If you have some experience with CMS systems and you're looking for something more than WordPress, but you're still intimidated by Drupal, Joomla! might be just the thing for you. The script is free, has a great number of plugins, modules and templates as well as good technical support. It's a system of choice for multimedia sites and sites with a lot of content - it's when it performs best.

IV. TYPO3

Typo3 is a very powerful and expanded CMS with huge possibilities. It's very advanced, but can do well in every case?The script is developed as Open Source and is chosen mostly by more advanced programmers who are looking for a comprehensive application with many functionalities and are willing to invest much time in studying it.The CMS can be downloaded and viewed at www.typo3.org.

Advantages

Modularity:

Probably the main goal for which Typo3 was created, was its modularity and diversity. That is why it's great as a script for a company page as well as a base for a large news site.

Extensions:

The system offers several thousandsextensions that can be quickly and easily installed. You can expand functionalities by additional image galleries, discussion boards, internet shop, etc.

Elastic administrators system:

Many systems allow for only one administrator. Typo3 allows for giving users all kinds of permissions, so that a user can be a plain user who can browse through the page content or an administrator who can manage it. What is more the users can be assigned to groups like editor groups.

Content types:

There are many types of content you can define in Typo3. This gives you a lot of control over the page layout when you add images, forms, tables, multimedia or just plain text.

Support:

Typo3 homepage has well extended documentation as well as a discussion board. You will find plenty of information and help concerning use and modification of the script.

Undoing changes:

The system contains extended undoing changes module. In case of a big portal with several administrators, this option is highly desirable. You will be able to restore

previous version of your page practically without any limitations.

Changing a page structure:

One of the most important advantages is ability to set a page structure without pre-fixed order of blocks, sections or articles.

Internal Typo Script language:

The script has an internal language called TypoScript that allows for creation of many elements like static HTML with dynamic content in it.

Disadvantages

Installation and modification:Typo3 is not easy to install and set up. It takes time to learn to use it, it definitely takes more time than you would need for WordPress or Joomla!. That's why it's not recommended for beginners, but for more advanced programmers.

Server resources and efficiency:

Modularity and expendability often means bigger demands on server parameters. This certainly is the case. Still, if the website is not too large and there will not be thousands of visitors, there should be no problems, at least not in the beginning.

From simple to hard:

While for editors content management in Typo3 is simple, and administrators are required to have somewhat more of the script's know-how, it's a hard nut to crack for programmers.

Conclusions

Typo3 is versatile and can be used to create a simple website as well as advanced portal with all kinds of contents, but it takes a lot of time to master it on the programmer's side. Modularity and expendability are its significant traits, but unfortunately this means losing on efficiency and high demands on server resources. It's not always worth to take a sledgehammer to crack a nut.

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