Managing library using content management system

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Abstract

Web presence of information shows liveliness in the current scenario. Library website is considered as a communication tool, which facilitates to create and publish the information regarding its activities and services. Formation and maintenance of a seamless library website require technical expertise, money and time. Content management systems (CMS) are computer software systems for organizing, displaying and facilitating collaborative creation of content. They consist of handy functions and modules for manage and organize website content. This paper discuss the need, benefits, advantages, reason to choose of CMS and provide the list of open source available content management software for developing website.

Keywords: Content management system, web content, Content Development, website, Open Source Software

Introduction

Information and documentation services accessible on the Internet /web are growing in an exponential approach. As the web gets into the centre stage of almost the entire range of our activities such as publishing, preservation, access and dissemination of information across the globe, it has become most essential to develop web skills. Content management (CM) can be defined as a process of collecting, organizing, categorizing, and structuring the informational resources of any type and format so that they can be saved, retrieved, published, updated, and repurposed or reused in any way desirable. Today's content management solution is either a sophisticated software-based system or a database-driven application. A full-featured content management system "takes content from inception to publication and does so in a way that provides for maximum content accessibility and reuse and easy, timely, accurate maintenance of the content base". Theoretically, content management encompasses a broad spectrum of areas such as document management, knowledge management, records management, and electronic content management, financial content management, and web content management. Web content management is one of the branches of content management. Content management gained importance during the explosion of Web sites in the mid-1990s.[4, 22]

Challenges in developing and maintaining library websites [10, 20]

Quality reference and user centric service requires a combination of having the right resources and providing the right services in the right time and place. Developing in all aspect Web has become a great impact on each one. The library website can be employed as a platform for various activities. It can operate as a bulletin of the different events, services and facility which offered to the patron. Library websites contents must be vibrant in nature. Regular updates of website content are necessitated to tale about continuing library activities, its required user friendly interface to avoid dependency on IT administrator or either required technical expertise. Timely updates only have meaning to provide service. Karen A. Coombs, Head of Web Services, University of Houston (UH) Libraries explains the

reasons that reshaped their library website to more dynamic in nature: "all content was passed through the Web services department before becoming part of the site. As a result, making updates was a time-consuming task and significant portions of the site were out-of-date. In addition, the site's structure was rigid and inflexible and provided no space for staff or users to participate. An informal needs assessment revealed that staff members wanted to control their own content and to have a way to make the site more engaging and interesting to their users". Innovative generation of website development gives more significance to interactivity with users. Following competence makes the website content more dynamic, user centered and Web 2.0 compliant:

· Blogs
· RSS feeds
· Discussion forum
· Surveys
· Wikis
· Podcasts etc.

Three factors affect time, technical expertise and money in development of an interactive and web 2.0 featured website. Static websites have no facility to encourage collaborative content development. An ideal new generation library website does the following:

Users participate in creating resource lists in the subject areas of their research.
Users contribute to research tips created by instruction of reference librarians.
Users add to technical instructions for such activities as off campus access, use of EndNote, using the library's printers, tips on working with workstation software etc.
Users comment on library services using the blogs linked to the pages of major services, e.g., reference, Interlibrary loan, circulation, reserves, online catalog, web site, general technology, physical plant, etc.

A Web site with this type of configuration based on interactive platform would be far different from the typical sites that libraries working with.

Content management system[19]

A content management system (CMS) also known as document management system is a computer application used to manage work flow needed to collaboratively create, edit, review, index, search, publish and archive various kinds of digital media and electronic text. CMS are frequently used for storing, controlling, versioning and publishing industry-specific documentation such as news articles, operators' manuals, technical manuals, sales guides and marketing brochures. The content may include computer files, image media, audio files, video files, electronic documents, and Web content. These concepts represent integrated and interdependent layers. There are various nomenclatures known in this area such as Web Content Management, Digital Asset Management, Digital Records Management, and Electronic Content Management and so on. While describing, it can be said that a Content Management System (CMS) makes it easy for non-technical contributors to maintain and expand their website. A CMS uses software and a database to manage and organize website content. Once a visitor makes a request to the website, the CMS selects the correct content and displays it in a custom interface template. This system enables to manage large amounts of content from multiple authors. Further describing in a layman's terms, it can be said that Content Management Systems come in all shapes and sizes. Organizations observed that this could be useful within their environment.

Key processes in CMS

Meaning of Content Management depends on whom the organization is referring to. The key elements and processes in web content management are given as following: Content Management divides logically into three areas:

- Content creation and contribution
- Content management and administration
- Content publishing and serving

Need of CMS

A Content Management System is a Web application that makes content authoring and delivery easy. It enables users to quickly and efficiently build, deploy, and maintain content-rich web sites by streamlining the web publishing process. Content Management Systems can reduce the need for costly site maintenance and thus empowering users to manage their own content.

- **Do-it-yourself :** For those, prefer to update and maintain their site themselves, a web content management system is the ideal solution.
- **No knowledge of web design needed :** Having a content management system ensures that the design of organization's website remains unchanged and the content can be updated without the need for programming or HTML knowledge. A Content Management System facilitates everyone with little or no experience in web design to update and maintain their own site. This is achieved through any computer connected to the Internet and without the need for additional client software.
- **Centralized location :** By using a Content Management System the organization can provide employees with a central location to provide and access up-to-date accurate information and applications. This surely results in increased employee productivity which is critical to achieving the most streamlined processes

Types of CMS[7]

There are four main categories of CMS, with their respective domains of use:

- Enterprise CMS (ECMS)
- Web CMS (WCMS)
- Document management system (DMS)
- Mobile CMS

A 'web content management' (WCM) system is a CMS designed to simplify the publication of Web content to Web sites, in particular allowing content creators to submit content without requiring technical knowledge of HTML or the uploading of files.

Advantages of CMS[9]

Separation of design, structure, and content : The division of these three layers allows many advantages throughout the life cycle of the website. Each area of the site can be recreated and adjusted independent of the other areas. The design layer can be completely reworked for a new user interface without the need for any adjustments to structure or content. The structure can be adjusted for additional functionality with no changes required to design and content. Content can be changed with no need to adjust the front-end design or functional structure. The separation of these three areas creates the flexible strength of a content management system.

Content production without programming or design experience : A Content Management System allows the editor to interact with the site in several ways. It provides a graphical user interface that allows the editor to create content, add images and multimedia files, create content schedules, and much more.

Decentralized maintenance. It is based on a common web browser. Editing anywhere, anytime removes restricted access.

Designed with non-technical content authors in mind. People with average knowledge of word processing can create the content directly. No HTML knowledge needed.

Configurable access restrictions. Users are assigned roles and permissions that prevent them from editing content which they are not authorized to change.

Content management system benefits[1,3]

If someone is planning to build a site that contains hundreds of pages, needs constant updating without needing to upload web pages to organization's web host, he should consider using a content management system or CMS. If not having HTML or other relevant language skills in the organization, one should consider deploying a content management system. With a content management system, organization does not require the skill of a skilled programmer to write organization's contents. Using the content management functionalities of the content management system, organization can easily manage creation, modification, and removal of contents from a Web site, without any knowledge of HTML language, while the content delivery application of the management system would compile the information and update it to organization's website. The features of a content management system vary but generally include web-based publishing, format management, revision control, indexing, search, and retrieval.

Managing Website with the help of a Content Management Software[12,15]

The websites created in the initial years of Internet were static in nature. This means the websites once created and uploaded on the Internet could not be changed. With time Internet grew to become an essential requirement for business development, information, advertising and entertainment. This generated the need for websites to be constantly updated to provide the latest information on business schemes, news, reviews etc. Also static websites composed of simple web pages provided limited information. The entire website had to be browsed in case of searching for something specific. People wanted websites to be more concise and informative at the same time. Either the website required special software to be upgraded or the platform on which it was built was obsolete. Due to this the site owners either had to launch a new website or spend big amounts of money on software and technical expertise. This was a slow and tedious process. Launching a new website meant more pages to be

added and more research work and structuring of the website was a time consuming job. The site owners also had to rely upon the availability of software and software engineers.

Content Management Software or the CMS solution provides the optimum solution to this problem. This web based CMS is used for creating, changing, editing or even updating websites with ease. Websites designed nowadays comprise of different types of content. This content can be defined as graphics, text or audio visual elements. A CMS solution is an effective Content Management Tool that arranges content in particularly organized manner automatically. This is an easy to understand application which can be operated by anyone with just a little understanding of computers. Web Based CMS gives the control of the websites back into the hands of their owners. Because of its easy operational features:

- Website owners can themselves update their websites at their own leisure with the help of a CMS solution.
- Websites designed on any given software can be edited, changed or updated through CM Software.
- Websites can store large amounts of data with the help of a Web based CMS.
- A Content Management Software provides quicker and more accurate access to the websites.
- A Content Management Tool saves valuable time and money on maintenance and upgrading.

These are just a few of the beneficial features that a Content Management Software provides. By using CMS there are a whole lot of other benefits that come into picture. For maintaining websites, CMS is the most strong, effective and economical choice. A CMS solution provides features and benefits that have changed the face of the modern day websites. From being simple web pages containing only text, to dynamic websites that can display graphics, store data, hide specific content, update menus automatically, and add additional pages and a lot more. Quick editing or upgrading of websites increases the scope of opportunities in various different fields.

Reasons for choosing Content Management Software[15,23]

Content Management Software is a revolutionary breakthrough in the field of web designing. With CMS, content management on a website has become far more convenient. This system enables the web owners to make changes on their websites faster and more often compared to other options of website editing.

A Convenient Application : A Content Management Software is easy to use as it does not require its user to be a technical expert. This allows the website owners to edit their websites without the help of a web designer.

Faster Upgrading : With the constraint of relying upon technical assistance removed, web owners can upgrade or modify their websites at will. The best part of a Content Management Software is that the websites can even be upgraded online. With the help of a CMS, without disabling the site, the upgraded content can be displayed in a matter of minutes.

Dynamic Websites : A Content Management Software changes the basic structure of a website. Unlike static web-pages, websites can now store large amounts of data, interact with other websites and update accordingly, display all sort of animated, audio or video content.

Enhances Accessibility : CMS can store all content of a website in text form. This proves beneficial as any text typed on a search engine can quickly relate to the website's content. Thereby, it increases the accessibility to the website.

Restricted Editing : On a CMS based website anyone can modify the content. In a professional website, CMS can restrict access for editing.

Auto Upgrading : A CMS content based website can be used as a forum. Here data can be added in specific fields which automatically adds a new page to the website and even updates the menu on the home page.

Timing Feature : With CMS, websites can be programmed to store and hide content to be displayed later. This hidden content is automatically displayed on the website on a pre-specified time Et date.

Customized Content Display : With CMS professional websites can be programmed with a 'login' feature. Upon login the website identifies the user and accordingly displays the content relevant to the user.

Internal Site Search : Content Management Software provides an internal search mechanism. This mechanism pulls out any specific information on the website without having to browse it completely.

Website Creation : CMS is used for creating websites. Because of its user friendly features dynamic websites can be created by using standard office applications.

Open Source Software Content Management Systems (CMS) PHP Scripts[14]

The content management systems scripts listed here, allow organization to install a PHP script onto their web account that makes this possible. Depending on the script organization install, content management scripts may allow users to easily change content on their site, define their site appearance site-wide by modifying a template, provide a search engine, site map, web statistics, online file manager, online content editor, etc.

1. ocPortal Content Management : This CMS is a web content management system that features galleries, news, file downloads, community forums and chats, *wiki,* content commenting and rating, a built-in search engine (site search), newsletters and mass mailing facilities, support ticket system, featured content (eg, image of the day, random quotes), paid membership sections with support for payment gateways like PayPal, banner support, etc.

2. Expression Engine Core : The Core version of this software is free for personal sites. It is a fully featured content management system and blogging software that has one of the easiest to understand and modify template system (for organization's site design and theme). It is versatile, has a sophisticated user/user-group system (for managing organization's users), easy to setup and get started, highly configurable, etc. It uses MySQL for its database.

3. Drupal : Drupal is an open source content management system (CMS) or platform that uses PHP and MySQL. It allows an individual user or even a community of users to publish, manage and maintain organization's website. Organization can use it to create blogs, forums, and picture galleries, file upload

and download sites, forums, collaborative authoring environments, podcasting, peer-to peer networking sites, etc. The system is modular and highly customizable. It is licensed under the GNU General Public License.

4. TextPattern Content Management System : Text Pattern is an open source CMS that attempts to make it easier for the average user to modify its templates. Its templates use a simple syntax known as Textile that allow organization to use a few simple markers to indicate things like images, hyperlinks, etc. The software allows multiple contributors, supports plugins, etc. TextPattern uses PHP and MySQL.

5. eZ Publish : Like most content management systems eZ Publish allows organization to publish the content of organization's site from within organization's web browser, using an online rich text editor. It supports content versioning, multimedia publishing, extensions, user management and access controls, workflows, the ability to publish from Microsoft Word, and so on. The CMS uses a MySQL database. It is licensed under the GNU General Public License (GPL).

6. Contentteller : This is an open source content management system that purports to be search engine friendly, in that it has a site map generator and automatically creates search engine friendly URLs. It allows organization to manage multiple websites from a single installation, has a template and style sheet system so that organization can customize the site, and is able to share its user database with 3rd party applications like certain forum software so that organization's users only need to register once for organization's site. The software is released under the GNU General Public License.

7. Drake CMS : Drake CMS is a PHP-based open source content management system that does not need any database system to be installed, although it supports a number of them (including MySQL, PostgreSQL, SQLite,Sybase, Frontbase, MaxDB, MS SQL, etc) if organization have them. It can be used to create community-based portals, magazines and newspapers, simple personal or family websites, company or organization websites, etc

8. Joomla! Content Management : Joomla! is an open source content management system that can be used to power organization's website and allow organization to easily manage it from an online interface. It includes an integrated WYSIWYG editor, support for multiple users/editors, a simple poll engine, several templates, etc. Organization can augment the features provided by the basic CMS installation by adding their extensions. Extensions available include blogging software, calendars, directory services, email newsletters, e-commerce and shopping cart engines, image and multimedia galleries, forums and chat software, banner advertising systems, business and organizational directories, dynamic form builders, etc. Joomla requires that organization's web server be running Apache and has PHP and MySQL installed.

9. OpenCMS : OpenCMS is an open source website content management system that uses Java, JSP, XML, MySQL on Tomcat. It comes with an integrated WYSIWYG editor and a simple text editor for Internet Explorer and Mozilla-based browsers like Firefox. The CMS software allows organization to view organization's workspace in an Explorer-like window, edit files by changing specific elements within the page or directly editing them using the built-in WYSIWYG editor, etc. This program is licensed under the GNU General Public License.

10. PHP-usion : PHP-Fusion uses a MySQL database to store the contents of organization's website. It requires PHP 4 running on an Apache server. The program is released under the GNU General Public License.

11.CMSimple Content Management : CMSimple Content Management is designed for webmasters with relatively small sites (less than 2 Mb in text content). It does not need organization's site to have a database - the content of organization's site is stored in a single HTML file.

12. TYPO3 Open Source Content Management System : TYPO3 is an open source content management system that is multilingual and allows WYSIWYG editing using a rich text editor. It has wizards for making tables, bullet lists, mail forms, etc; allows multiple page editing. It also allows offline editing, preview of content online, scheduled publishing; has an indexed search engine, a direct mail or newsletter system, etc. Organization can use HTML templates, PHP scripts, create protected areas, and so on. The entire system is released under the GNU General Public License

13. BIGACE Web CMS: Content Management with Smarty Templates : The BIGACE CMS supports multiple websites on a single installation, template support, auto generated menus, content hierarchy with unlimited depth and size, a category system, workflows, online WYSYIWYG editor, full-text search ,integrated statistics, search engine friendly URLs, etc.

14. ezContents Content Management System : ezContents is an open source website content management system that uses PHP and MySQL. Organization can add authors that write content, manage permissions, workflow, create a layout etc.

15. phpCMS - PHP Content Management System : This PHP content management script includes a file manager, full text search engine, online editor, statistics, dynamic menus, etc. Unlike many of the other content management systems this one works with flat files.

All these open source content management systems are powerful, multifunctional and can be used to develop websites, intranet and portals.

Conclusion

In the information age and it is imperative to store and retrieve information in the most convenient way. In today's time website becomes prime concern of information. Information can be organized by hosting the website. Most of the libraries face the problem in up to date content in the website. So content management system allows librarians to create resource / information page without any prior knowledge of web development technologies. Open source content management systems are most convenient and well economic solutions to build functional library websites. Mainly care and concern must be given while deciding an open source content management system appropriate for organizational requirements to build up a website. CMS ensures flawless website content input, updating and making use collaboratively. This is the focal advantage of content management system over traditional website development.

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