**Subject: Web Content Management**

**Content Management System (CMS):**

**What is CMS?**

* **Content:** Content is any information that is being distributed. A book, a magazine article,

and the information on a website are all content.

* **Content Management System:** A **content management system (CMS):**

1) Itis a computer program that allows publishing, editing and modifying content as well as maintenance from a central interface.

2) A content management system can perform a variety of different tasks for a website including regulating when content is displayed, how many times the content is shown to a specific user, and managing how the content connects or interacts with other elements of the website.

3) CMSs were developed to share the information across the environment. A CMS helps you to create and store content in a shared repository. It then manages the relationships between content items for you. Finally, it ensures that each content item is connected to the right style sheet when it comes to be published.

4) Using CMS you can create and publish content in a standard format without needing to know HTML or other languages.

5) The first content management system (CMS) was announced at the end of 1990s. This CMS was designed to simplify the complex task writing numerous versions of code and to make the website development process more flexible.

**Roles and Responsibilities in CMS:**

* Creator - responsible for creating and editing content.
* Editor - responsible for tuning the content message and the style of delivery, including translation and localization.
* Publisher - responsible for releasing the content for use.
* Administrator - responsible for managing access permissions to folders and files, usually accomplished by assigning access rights to user groups or roles. Admins may also assist and support users in various ways.
* Consumer, viewer or guest- the person who reads or otherwise takes in content after it is published or shared.

**Elements of Content Management System (CMS):**

* Content Management Application (CMA) is the front-end user interface that allows a user, even with limited expertise, to add, modify and remove content from a Web site without the intervention of a Webmaster.
* Content Delivery Application (CDA) compiles that information and updates the Web site.

**Function of CMS :**

1) The core function of content management system is to present information on web sites.

2) CMS features vary widely from system to system. Simple systems showcase a handful of features, while other releases, notably enterprise systems, offer more complex and powerful functions.

3) Most CMS include Web-based publishing, format management, revision control, indexing, search, and retrieval.

4) The CMS increments the version number when new updates are added to an already-existing file.

5) A CMS may serve as a central repository containing documents, movies, pictures, phone numbers, and scientific data.

6) CMSs can be used for storing, controlling, revising, semantically enriching and publishing documentation.

**Features of CMS :**

A [content management system](http://en.wikipedia.org/wiki/Content_management_system) is a set of automated processes that may support the following features:

* Import and creation of documents and multimedia material.
* Identification of all key users and their roles.
* The ability to assign roles and responsibilities to different instances of content categories or types.
* The ability to track and manage multiple versions of a single instance of content.
* The ability to publish the content to a repository to support access to the content. Increasingly, the repository is an inherent part of the system, and incorporates enterprise search and retrieval.

**SMS arch. –** see the notes

**advs.**

**Types of CMS :**

Basically a content management system can be divided into two types:

* **Proprietary CMS:**

1) A proprietary CMS is a content management system in which the back end code is available only to the particular developer, so only the single Admin can edit or customize the webpage.

2) Many companies sell licenses to use their own proprietary CMS. "Proprietary" generally means someone owns the rights to the CMS application and you need permission or a license to use it.

3) Even with a license, in most cases, license holders may still be prohibited from duplicating the CMS or making alterations to the application unless they purchase a more expensive "developers" license.

4) A proprietary CMS is a database driven, content management system website that the website owner can login to and make changes.

5) Yahoo Store, many automotive dealer and real estate websites are a good example of this.

6) The problem with a proprietary CMS is that development costs and monthly fees are much higher than an open source solution. The lack of "portability" is probably the major reason most small business owners choose to use Open Source CMS.

**A Proprietary solution will be best for you if:**

Your online presence is your business, but you just need to focus on the content not the technology and your functional needs are met by the software.

You do not require custom development other than a great design.

You don’t want to deal with updates, bugs and security issues and want a full service hosting plan.

You don’t want to deal with decisions on which modules may be best, or deal with issues like upgrading the platform and finding that 3 of the 16 add-ons you use also require an upgrade to continue to function.

**Issues:**

Companies and software solutions come and go. You must have confidence in the company offering the solution and that they will both be around and able to continually invest in the product.

You need to ensure you have ownership and access to the content and design should you decide to move on for any reason (applies equally to open source solutions). Many companies will not provide this by default.

You may have little option for software enhancements or customisations or they may be very expensive. You are likely to be limited to the standard modules and functionality available, so make sure the solution is comprehensive and developing (even if you don’t need all of it now a comprehensive product suite is a good sign for the future.).

E.g. Ektron, SiteCore, Kentico, HP's Autonomy Team Site

ExpressionEngine (johnmccain.com),

* **Open source CMS:**

1) An open source CMS is an open system that can be used by anyone to make any change by using any device and do not require you to purchase a license.

2) Open source CMS are free to download and upgrade costing is only the development costs.

3) Because they are open source code, we have the advantage of backing up and saving website database and files.

4) Another advantage to the open source CMS is constant development and new widgets or features that are often free, very low cost and take only minutes to install.

5) There are hundreds of thousands of free templates available for OS CMS.

6) The most popular Open Source CMS are WordPress, Joomla, Drupal, Mambo Open Source (MOS).

**Choose an Open Source System if**

you will be investing all of your time enhancing, tweaking and improving your website.

you (or your technology partner) have a plan to keep the software updated for bugs, security issues and enhancements.

**Key issues with open source:**

You get what you pay for. Building a website on an open source solutions is not free, but basic template sites are very cheap. They also look cheap. Expect to pay well for a good, unique design.

Support for, and upgrades to the software are typically not included. While there are thousands of developers in the open source community enhancing the software, none of them are working on your website. Unless you have a support agreement with your developer, your website will remain on the version it was installed on, complete with any bugs and security issues. If you want access to the latest enhancements you will typically have to pay your developer to install them.

The majority of web developers using open source solutions are not actually software developers. While they may be experts at customising the design and working with various modules, they will not be able to develop truly custom software or fix bugs and other shortcomings. They will be reliant on the community for that.

Pick the wrong software and in 2-3 years time you might find the community have moved on and development has stalled.

**Types of Open Source CMS :**

**Web content management system –**

A web content management system (web CMS) is a bundled or stand-alone application to create, manage, store and deploy content on Web pages. Web content includes text and embedded graphics, photos, video, audio, and code (e.g., for applications) that displays content or interacts with the user.

A WCMS promotes collaboration among users by allowing multiple-author editing of content.

**Component content management system -**

A component content management system (CCMS) specializes in the creation of documents from component parts. These components can be reused (rather than copied and pasted) within another document or across multiple documents. This ensures that content is consistent across the entire documentation set. Component Content Management is the practice of componentising content to small modules that can be use to create publications by pulling the desired modules together at publish-time. Publishing modules can either follow a preset table of contents (e.g. a DITA map or S1000D DML) or be completely dynamic, allowing users to make their own documents on the fly.

**Enterprise content management systems -**

An enterprise content management system (ECM) organizes documents, contacts and records related to the processes of a commercial organization.

**CMS Architecture:**

* CMS architectures are built upon the concept of a 3-tier architecture with client, CMS server, and database backend. Above Figure shows the architecture of a CMS.
* The main difference of CMSs compared to other information systems is to focus on flexible content modeling and storage.
* A CMS User Interface at the top layer presents the content and offers editorial features to create, modify, and manage content within its lifecycle.
* Access to the content itself is provided by a Content Access layer. This layer is used by the User Interface to get access to the content and the content management features of the CMS.
* The core management features are implemented in the Content Management layer. This layer provides functionalities for the definition of the domain or application specific Content Data Model. Access control and content lifecycle definitions are further typical management features implemented in this layer.
* The Content Data Model layer is conceptually placed below the Content Management layer that has the necessary features to manipulate the model. The Content Data Model is the application specific model based on the underlying Content Repository. Content data model is the representation of content and their persistence need to be highly adaptable to any domain or customer scenario.
* The Content Repository defines the fundamental concepts and persistence mechanisms for any Content Data Model that is defined on top.
* The Content Management features are tightly related to the Content Administration layer to administer the CMS stack.

**Advantages of CMS:**

1) Ability to add or edit pages on your website yourself:

2) Not have to pay your developer monthly maintenance or hourly rate for changes

3) Useful in organisations, with many content contributors, that perhaps need to audit additions and changes to content being made

**Disadvantages of CMS:**

1) Potential to break your websites look and feel if not used properly.

So many things can go wrong, formatting errors, incorrect preperation of images, no image compression, inconsistant resizing resulting in out of proporation photographs, breaking away from the ‘style guide’ of your website that you may have paid a designer a lot of money to create for you, thereby effecting the consistancy of your brand.

2)You may not have the resource to update website regularly.

3) Using a CMS effectively can require certain computer skills that you or your staff may not have.

**Web Content Management System (Web CMS):**

**What is Web CMS:**

* A **web content management system** (WCMS) is a software system that provides website authoring, collaboration, and administration tools designed to allow users to create and manage website content with relative ease.
* A robust WCMS offer users the ability to manage documents.
* Most systems use a content repository or a database to store page content, metadata, and other information assets that might be needed by the system.
* A presentation layer displays the content to website visitors based on a set of templates.
* Administration is typically done through browser-based interfaces.
* A WCMS allows non-technical users to make changes to a website with little training.
* A WCMS typically requires a systems administrator and/or a web developer to set up and add features, but it is primarily a website maintenance tool for non-technical staff.

**Features of Web CMS:**

A web content management system is used to control a dynamic collection of web material, including HTML documents, images, and other forms of media. It facilitates document control, auditing, editing, and timeline management.

A WCMS typically has the following features:

* Automated templates –

Create standard output templates (usually HTML and XML) that can be automatically applied to new and existing content, allowing the appearance of all content to be changed from one central place.

* Access control –

Some WCMS systems support user groups. User groups allow you to control how registered users interact with the site. A page on the site can be restricted to one or more groups. This means an anonymous user, or a logged on user who is not a member of the group a page is restricted to, will be denied access to the page.

* Scalable expansion –

Available in most modern WCMSs is the ability to expand a single implementation (one installation on one server) across multiple domains, depending on the server's settings.

* Easily editable content -

Once content is separated from the visual presentation of a site, it usually becomes much easier and quicker to edit and manipulate. Most WCMS software includes editing tools allowing non-technical users to create and edit content.

* Scalable feature sets –

Most WCMS software includes plug-ins or modules that can be easily installed to extend an existing site's functionality.

* Web standards upgrades -

Active WCMS software usually receives regular updates that include new feature sets and keep the system up to current web standards.

* Collaboration -

CMS software may act as a collaboration platform allowing content to be retrieved and worked on by one or many authorized users.

* Delegation -

Some CMS software allows for various user groups to have limited privileges over specific content on the website, spreading out the responsibility of content management.

* Document management –

CMS software may provide a means of collaboratively managing the life cycle of a document from initial creation time, through revisions, publication, archive, and document destruction.

* Content syndication -

CMS software often assists in content distribution. They may also e-mail users when updates are available as part of the workflow process.

* Multilingual -

It has ability to display content in multiple languages.

* Versioning -

WCMS allow authorized editors to retrieve previous versions and to continue work from a selected point. Versioning is useful for content that changes over time and requires updating, but it may be necessary to go back to or reference a previous copy.

**Types of Web CMS :**

There are three major types of WCMS: offline processing, online processing, and hybrid systems. These terms describe the deployment pattern for the WCMS in terms of when presentation templates are applied to render web pages from structured content.

* Offline processing:

These systems pre-process all content, applying templates before publication to generate web pages. Since pre-processing systems do not require a server to apply the templates at request time, they may also exist purely as design-time tools.

* Online processing:

These systems apply templates on-demand. HTML may be generated when a user visits the page or pulled from a web cache.

* Hybrid systems:

These systems combine the offline and online approaches.

**Advantages of Web CMS:**

* Low cost –

Some content management systems are free, such as Drupal, TYPO3, Joomla, and WordPress. Others may be affordable based on size subscriptions.

* Easy customization -

A universal layout is created, making pages have a similar theme and design without much code. Many CMS tools use a drag and drop AJAX system for their design modes. It makes it easy for beginner users to create custom front-ends.

* Easy to use -

CMSs are designed with non-technical people in mind. Simplicity in design of the admin UI allows website content managers and other users to update content.

* Workflow management –

WHYPERLINK "http://en.wikipedia.org/wiki/Workflow"orkflow is the process of creating cycles of sequential and parallel tasks that must be accomplished in the CMS. For example, one or many content creators can submit a story, but it is not published until the copy editor cleans it up and the editor-in-chief approves it.

CMSs provide the facility to control how content is published, when it is published, and who publishes it.

**Disadvantages of Web CMS :**

* Cost of implementation -

Larger scale implementations may require training, planning, and certifications. Certain CMSs may require hardware installations. Commitment to the software is required on bigger investments. Commitment to training, developing, and upkeep are all costs that will be incurred for enterprise systems.

* Cost of maintenance -

Maintaining CMSs may require license updates, upgrades, and hardware maintenance.

* Latency issues -

Larger CMSs can experience latency if hardware infrastructure is not up to date, if databases are not being utilized correctly.

**Which Web CMS is best for you?**

* WordPress –

It is the most popular content management system.

It originated as a blogging CMS, but later evolved into a fully-fledged CMS.

It is ideal for personal websites, blogs, small businesses, and those with the least technical and no desire to learn any programming skills.

Word Press is a great place to start. It has the most available free templates and plugins available today.

If you like to hack and code, Word Press can still indulge even the hard core programmer in you.

* Joomla –

It is a popular content management system that can be used to easily create and edit webpages, but it is more complex than Word press.

Olympus, Porsche, Sprint and Vodafone are just a few major corporations that use Joomla.

Unlike Word Press, Joomla was never designed as a blogging software, but works fine for blogs, too.

Joomla takes a little bit more time to set up than Word Press, but is overall more powerful and still easier than the mighty Drupal.

* Drupal –

Drupal is the third top used CMS and originated before WordPress and Joomla.

It is more difficult to learn and understand than the above two CMSs, but is the most secure.

It powers the White House site.

Other companies using Drupal include AT&T, McDonald's, Duke and Standford Universities, and Symantic, Fiju, Linux Foundation also use Drupal.